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Languages and Employability

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CRELL REPORT

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Note

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EXECUTIVE SUMMARY

This report reviews evidence regarding the foreign language competences of European citizens and presents new findings about the relationship between foreign language skills and the likelihood of being in employment. In view of providing research evidence that can inform European Union (EU) policy initiatives, it reviews studies that frame knowledge of languages as a form of human capital, presents descriptive statistics about language knowledge and investigates whether this knowledge is related to employment chances. Using data from the Adult Education Survey (AES 2011) the analyses show how many languages adults know and their proficiency level in the two best known languages in the following 25 Member States: Austria (AT), Belgium (BL), Bulgaria (BG), Cyprus (CY), the Czech Republic (CZ), Denmark (DE), Estonia (EE), Finland (FI), France (FR), Germany (DE), Greece (EL), Hungary (HU), Ireland (IE), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), the Netherlands (NL), Poland (PL), Portugal (PT), Slovakia (SK), Slovenia (SI), Spain (ES) and Sweden (SE). To understand the relationship between language knowledge and employment status, data from the AES 2011 for 24 Member States[1] was used to examine whether skills in foreign languages increase the employment rates of 25-64 year-old adults. In addition, the analyses capture different relationships between language skills and employment for specific languages - English, French, German, Russian and Spanish – and age groups (25-40 and 41-64). The main findings are summarised below.

Foreign language knowledge and proficiency in the EU25

- In the EU25, the average number of foreign languages known by adults is one; 34% do not know any foreign language, 36% know one foreign language and 21% know two foreign languages, while less than 10% say they know three or more foreign languages.
- Across EU Member States, the younger the age groups, the higher the number of languages known and the proficiency level reported.
- Across EU Member States, the number of languages known increases with the level of educational attainment.
- Across EU Member States, in general, employed individuals know a higher number of foreign languages than unemployed and inactive ones.
- English, German and French are the most widely known foreign languages in Europe.

[1] Ireland was excluded due to the high percentage of missing information on employment status.

- In the EU25, around 25% of adults who know one or more foreign languages know at least one of them at the proficient level.
- Across EU Member States, adults who report knowing more foreign languages also tend to report higher proficiency levels in the languages they know.
- On average, secondary education graduates with a general orientation of study are more likely to know more foreign languages than graduates from vocational secondary education programmes.

The relationship between foreign language knowledge and employment status in the EU24

- In 17 Member States knowing one foreign language, two or more and/or being proficient in the best known languages is positively related with employment chances.
- Adults who know one or more foreign languages are more likely to be employed than those who do not know any foreign language. This relationship holds true even for basic competences.
- Being proficient in at least one of the two best known foreign languages is positively associated with employment chances in 6 Member States.

The association between knowledge of different foreign languages and English proficiency with employment status in the EU24

- In the EU24, there is a positive relationship between knowing English and Russian and the likelihood of being employed for the entire population (25-64) surveyed and also for distinct age groups; 25-40 and 41-64.
- In the EU24, being proficient in English is positively associated with being employed only for the 25-40 age group and knowing German has a positive association with employment status for the 41-64 age group.
- In 13 out of 24 Member States knowing English is associated with a higher likelihood of being employed. In 4 of those 13 being proficient in English also increases employment chances. In 5 Member States knowing Russian, independently of proficiency level, is associated with employment status.
- For the age group 25-40, in 10 of the 24 Member States there is a positive association between knowing a foreign language or being proficient in English and employment status. In 5 Member States being proficient in English is associated with a higher rate of employment.

- For the age group 41-64, in 16 of the 24 Member States there is a positive relationship between knowing a foreign language or in being proficient in English and being employed. In 13 Member States knowing English, independently of its proficiency level, increases employment chances.

In sum, these findings indicate that knowing foreign languages and being proficient in them is an important factor for being employed. This is the case in 17 Member States, although different patterns emerge in different Member States in relation to specific languages, proficiency levels and age groups.

TABLE OF CONTENTS

GLOSSARY

Bilingualism: The presence of two languages within a given territory or the ability to speak two languages. Bilinguals are individuals that speak two languages.

Foreign Language: A language that is not spoken in the native country of a person. In the Adult Education Survey (AES) questionnaire the term 'foreign language' is not used to describe languages other than the mother tongue to avoid misunderstandings; for example, when there is more than one official language used in a country and it does not coincide with mother tongue.

International Languages: In AES, 'international languages' are defined as languages spoken in two or more countries.

Mother tongue: In AES, 'mother tongue' is defined as the first language learned at home in childhood and still understood by the individual at the time of the survey.

Monolingualism: Knowing or being able to use only one language.

Multilingualism: Refers to the use of two or more languages, either by an individual speaker or by a community of speakers. Multilinguals are people that speak more than one language.

Official Language: A language that has a special legal status in a particular legally constituted political entity such as a State or part of a State, and that serves as a language of administration. Examples: Spanish in Chile; Italian and German in Alto Adige (Italy).
Official Languages of the European Union: languages used by people within the Member States of the European Union whose official status is recognised by regulation n. 1 of 1958 and its adaptations.

Bulgarian	French	Maltese
Croatian	German	Polish
Czech	Greek	Portuguese
Danish	Hungarian	Romanian
Dutch	Irish	Slovak
English	Italian	Slovenian
Estonian	Latvian	Spanish
Finnish	Lithuanian	Swedish

Second Language: A language learned by a person after his or her native language, especially as a resident of an area where it is in general use.

INTRODUCTION

European citizens believe that knowing foreign languages increases their chances of finding a better job in their own country and abroad (European Commission, 2012a). According to the *Languages for Jobs* report (European Commission, 2011), demand for foreign language skills in the European labour market is steadily rising and also bound to increase in the short- to medium-term future. In this context, the Commission Staff working document on *Language competences for employability, mobility and growth* (European Commission, 2012b) stresses that "language learning outcomes must be geared to support employability, mobility and growth. Education systems have to respond better to pupils' learning and professional needs and work more closely with employers, chambers of commerce and other stakeholders, linking language teaching to the creation of EU-level career paths" (p.2).

However, there is little evidence on how foreign language knowledge may increase labour market opportunities in European Member States. Existing research (Williams, 2011) indicates that there is a wage premium associated with foreign language knowledge in some European countries. Evidence further suggests that Small and Medium Size enterprises (SMEs) that compete in global markets look for employees with language skills and lose revenues when their work force does not have adequate foreign language skills. Nonetheless, research on whether language knowledge affects individuals' chances of employment in different Member States is lacking. The Adult Education Survey (AES) allows for the investigation of the presence of this association. More specifically, any advantage or lack thereof associated with language knowledge in the labour market can be investigated using AES data by employment and activity status (employed/not employed). Importantly, the information collected in AES includes individual socio-demographic characteristics, information on foreign language knowledge and on employment status, which allows for the control of confounding factors such as education level, age, gender and parental education.

Given the high unemployment rate registered in many Member States and current policy efforts to boost language competences (European Commission, 2012b) the investigation of whether language knowledge is related to the chances of employment is warranted and provides policy-based evidence. This report begins by discussing the relevance of foreign language skills for the European Union. Second, it offers an overview of foreign language learning during schooling and its relation with employment opportunities and reviews empirical findings about the relationship between language knowledge and employment opportunities. Third, it presents results about language learning at school using UNESCO/OECD/Eurostat (UOE) data to examine the progress registered

between 2000 and 2012. Fourth, it describes the findings relative to the self-reported language knowledge of the adult population collected in the AES 2011. Fifth, based on analyses of the AES 2011 data it presents results for the relationship between language skills and employment opportunities. Lastly, it summarises the findings and discusses the results.

PART I

The Relevance of Foreign Language Skills for the European Union

Current efforts to increase foreign language provision in primary and secondary education as well as in vocational education and training can be traced back to so-called "Barcelona objective of 2002". At the Barcelona European Council meeting Member States agreed that pupils should be taught at least two foreign languages from a very early age (European Council, 2002). Since then, most Member States have increased language learning provision in primary and secondary education and have implemented reforms to begin the learning of foreign languages at an earlier age. The average number of languages studied in the European Union in primary school increased by almost a third between 2000 and 2008 (Mejer, Boateng, & Turchetti, 2010). However, second foreign language learning is still not compulsory in some Member States and even among those who do study a second foreign language some do not start until the age of ten. Moreover, in some Member States such as NL, IE and UK some students continue to lack the opportunity to study two foreign languages during compulsory schooling (Baidak, Borodankova, Kocanova, & Motiejunaite, 2012).

Nonetheless, with respect to the number of pupils that study a foreign language Eurydice (2012) data show that the proportion of students in primary education (between the ages of 6 and 9) *not* learning a foreign language dropped by one third in only five years, from 32.8% to 21.8% between the academic years 2004/05 and 2009/10. Furthermore, with regard to the *number* of foreign languages studied, the proportion of lower secondary education pupils studying two or more foreign languages rose from 46.7% to 60.8% during the same period (Baidak et al., 2012). More recent UOE data show a decrease in the number of pupils learning one foreign language in primary and secondary education in many EU Member States between 2010 and 2012. Nonetheless, in the vast majority of these countries the number of pupils studying two or more foreign languages remains equal or increases within this time period. According to the most recent data available in the majority of EU Member States more than half of the students in upper secondary education are studying at least two foreign languages, reaching a very high proportion (over 90%) in CZ, EE, FR, LU, RO, SI, SK and FI (Eurostat, 2015).

Data show that English is by far the most studied foreign language at all levels of education in EU Member States. Studying English in secondary education is compulsory in almost every Member State (Mejer et al., 2010). In 2012 English was being studied in every EU Member State in lower secondary education. In several Member States, over 90 % of lower and upper secondary

students were learning English (with only two exceptions; HU and PT) (Eurostat, 2015), while the percentage of upper secondary students learning French (24%) or German (21%) was lower.

However, *European Union language initiatives* do not regard English as the only useful language for personal and professional development. EU language and multilingualism policies have emphasised the importance of promoting linguistic diversity and foreign language skills in several conclusion and resolution documents since the 1990s[2]. The European Parliament and Council Decision 1934/200/EC (2000)[3] included among its main objectives raising citizens' awareness of the benefits of language competences for a better personal and professional development and for boosting economic growth in society. Since then, EU policy actions have continued to place emphasis on the importance of foreign language knowledge as a strategy to create more and better jobs and to boost EU social inclusion and economic growth. In particular, the proposed new Framework Strategy for Multilingualism (European Commission, 2005)[4] listed the following key actions:

- Underlining the major role that languages and multilingualism play in the European economy, and finding ways to develop this further;
- Encouraging all citizens to learn and speak more languages, in order to improve mutual understanding and communication;
- Ensuring that citizens have access to EU legislation, procedures and information in their own language.

Linking foreign language knowledge to employment chances, the Communication on "Multilingualism: An asset for Europe and a shared commitment" from the Commission[5] (European Commission, 2008a, p. 8) stated that "linguistic and intercultural skills increase the chances of obtaining a better job. In particular, command of several foreign languages gives a competitive advantage: companies are increasingly looking for skills in a number of languages to conduct business in the EU and abroad" (European Commission, 2008a). This communication also highlighted that the mobility schemes that promote and support foreign language learning among the EU citizens should be more widely accessible. In the same year, the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the European strategy for Multilingualism highlighted the importance of foreign language knowledge in relation to employment opportunities

[2] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32002G0223%2801%29&rid=2
[3] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32000D1934&from=EN
[4] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52005DC0596
[5] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008DC0566&from=EN

and proposed that, in order to better promote multilingualism as a factor in the European economy's competitiveness and people's mobility and chances of employment, the following initiatives should be considered by Member States (European Commission, 2008b, p. 4):

> "(a) Support the provision and learning of a wide range of languages, in order to help enterprises, especially SMEs, to broaden their access to markets - in particular emerging markets – across the world;
>
> (b) Encourage greater account to be taken of language skills in the career development of employees, particularly in SMEs enterprises;
>
> (c) Draw on the European Structural Funds, where appropriate, in order to provide job-specific language courses in further vocational training and adult education;
>
> (d) Value and make use of the linguistic competences of citizens with migrant backgrounds, as a means of strengthening both intercultural dialogue and economic competitiveness."

Additionally, important initiatives such as the Lisbon Strategy (European Council, 2000) have been put in place where European citizens are regarded as a main asset and developing their skills is proposed as a main strategy to maximise employment and social inclusion. In particular, the Lisbon Strategy called for a new European Framework of basic skills to be provided through lifelong learning in which foreign language skills were considered. All these policy-related documents have supported the idea that knowing foreign languages is a skill that plays a crucial role in citizens' employment, providing individuals the opportunity to enter employment or to progress during their professional career path.

Specific EU actions following the Framework Strategy for Multilingualism include the European Survey of Language Competences (ESLC) (2011)[6]. This study served as a useful tool to assess foreign language learning and linguistic diversity in EU Member States. It measured the foreign language skills of 15-year-old students using tests of language competence following the Common European Framework of Reference for Languages (CEFR)[7] (Council of Europe, 2011). The five most widely taught EU official languages in the EU were considered (i.e. English, French, German, Spanish and Italian) and students were tested in reading, listening and writing skills. In addition to the language competences tests, the ESLC collected questionnaires that gathered contextual information on students, teachers and country-level language policies. These questionnaires were included with the intention of providing data for a "more productive

[6] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52003DC0449&from=EN
[7] http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf

comparison of language policies, and language teaching methods between Member States, with a view to identifying and sharing good practice" (Commission of the European Communities, 2005[8], p. 5). Differences were found within and among educational systems in terms of students' proficiency levels and also in the age students start learning a foreign language.

Concurrently, the Seventh Framework Programme for 2007-2013[9] (European Union, 2006) aims to boost growth and employment in the European Union (EU) in the context of a global economy by responding to the research and knowledge needs of industry and EU policy. With respect to language learning, this programme identified three key target actions to promote foreign language skills in different areas of education. These are the following:

1. Life-long language learning: This action aimed at promoting learning of at least two foreign languages from a very early age and also among adults, to continue with the provision of foreign language learning in secondary and tertiary education, to increase the range of languages taught and to develop learning programmes for those with special education needs.
2. Improving language learning and teaching: This action aimed to implement language learning objectives in schools' policies as well as increasing the provision of language teachers, providing them with suitable training programmes and monitoring the language skills of students.
3. Creating language-friendly environments: This action aimed to establish language-friendly communities, promoting linguistic diversity and making language learning more accessible.

Lastly, in 2014 the Education, Youth, Culture and Sport Council concluded in their Council conclusions on multilingualism and the development of language competences[10] (European Union, 2014) that "language competences contribute to the mobility, employability and personal development of European citizens, in particular young people, in line with the objectives of the Europe 2020 strategy for growth and jobs".

Many *EU projects* have supported the EU initiatives and resolutions previously described, initially through the Lingua Programme (1995 -1999), which was designed to encourage and support linguistic diversity throughout the Union, to contribute to an improvement in the quality of language teaching and learning and to promote access to lifelong language learning opportunities. Later, the

[8] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52005DC0356&from=EN
[9] http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L:2006:412:FULL&from=EN
[10] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XG0614%2806%29&from=EN

Lifelong Learning Programme (LLP) (2007) provided support to school pupils, university students, adult learners, and funded a variety of projects for language learning such as the Erasmus and the Leonardo da Vinci programs. In addition, important studies have been commissioned to provide the European Commission and decision-makers in Member States with practical information on the use of language skills within the business environment, such as the *The Effects on the European Economy of Shortages of Foreign Language Skills in Enterprise* (ELAN) study, the project for *Promoting, Implementing, Mapping Language and Intercultural Communication Strategies* (PIMLICO) and the *Languages Strategies for Competitiveness and Employability* (CELAN) network project.

ELAN was a study carried out by the National Centre for Languages (CILT) in 2006 with a view to provide the Commission with practical information on the use of foreign languages and their impact on business performance within SMEs. Data from almost 2,000 SMEs was gathered using a survey that measured the impact of foreign language skills on business performance. The results indicated that the lack of foreign language knowledge in SMEs that trade/export goods and services was associated with the loss of business opportunities. Moreover, this study showed that a large percentage of recruiters were opting for native speakers candidates and/or candidates with language skills, that a vast number of companies were providing language training to their staff, that not only English, but also other languages (such as Russian, French or German) are used in European businesses, and that candidates with work experience abroad were considered more competitive than their peers by recruiters due to their language skills and broader business culture.

This study also showed that almost half of all SMEs had plans for expanding their market outside their frontiers and that they expected an increasing demand for language competencies. However, current national educational systems were not ready to assist the young generations in meeting these language needs, ELAN made important general and specific recommendations to develop incentives for improving the use of languages to boost business performance. Among others, one recommendation was to establish a stronger link between European/national/regional/local language polices and the needs of business. Also, that SMEs and enterprises should support education and training programmes by working with educational institutions (i.e. schools, colleges and universities). Finally, key recommendations were made to improve the match between employers' needs and foreign language education and training. These were the following:

a) Diversifying the range of languages taught, particularly in tertiary and vocationally-oriented education;

b) Improving the contextualization of courses and qualifications to the business context;

c) Embedding periods of work experience abroad, with explicit opportunities to use the target language, within courses which combine languages with other subject areas relevant to business;

d) Improving flexibility to meet changing employer needs (Hagen, Foreman-Peck, Davila-Philippon, Nordgren, & Hagen, 2006, pp.59).[11]

More recently, in 2011, the European Commission's Directorate-General for Education and Culture commissioned the PIMLICO[12] project, which identified 40 exemplar companies based on their unique approach in the use and promotion of foreign languages skills. Common features among the language management strategies of these exemplar companies were their functional capability across a range of languages, their high-level competence in English, their ability to operate globally and adapt to differing linguistic demands, the use of local agents for solving linguistic and cultural issues and their persuasive internalization strategy. Conclusions highlighted that, although infrastructural support is available either by national policies or country-wide language support for companies, there are large differences in the level of help across countries. The recommendations made to the European Commission emphasised that funded support programs are crucial for promoting and ensuring the development of best-practice models of language infrastructure. This would help ensure that companies implement effective management strategies to successfully compete in the global market.

In 2013 the LLP program launched the CELAN project to provide a network of language services to business stakeholders. As in previous projects, this project considers foreign languages as a key skill for competitiveness and employability. However, as opposed to previous projects, it considers foreign language skills as one element of a set of skills, with other skills also playing a crucial role for professional and economic success. The project main activities are:

- Research on the linguistic needs of European companies/SMEs in different sectors;
- Analysis of existing language-related services and tools;
- Development of on-line applications to support the language needs of business users.

From the data gathered through the Language Needs Questionnaire, the CELAN main conclusions in relation to business needs were:

[11] http://ec.europa.eu/languages/policy/strategic-framework/documents/elan_en.pdf
[12] http://ec.europa.eu/languages/policy/strategic-framework/documents/pimlico-full-report_en.pdf

1. Languages play a fundamental role in European businesses for their development in a globalised world. Multilingualism is no longer a choice or an option; it has become a must for business growth;
2. European Business relies on the labor market for the supply of Human Resources with the required language skills;
3. Lack of language skills could become an impediment for employability, notably for careers leading to management positions;
4. European business understands that further to the economic driver there are also other important reasons for developing multilingual skills;
5. The majority of European businesses still lack a corporate language development strategy
6. Business has a good overview of the tools and services offered by the language industry and uses them as appropriate;
7. EU languages cover well European Business Needs, at least for a start (CELAN, 2011[13]).

As reviewed above, linguistic diversity has been promoted throughout the European Union over the last decades and foreign languages are now being taught in schools, universities, adult education centres and enterprises (European Commission, 2011). However, despite the European Union's efforts in embracing foreign languages skills for employment opportunities, European education and training systems do not yet align with the needs businesses and employers have, as workers' language skills are below their requirements. For instance, only 19% of employers reported being very satisfied with the foreign language skills of graduate employees (Flash Eurobarometer, 2010). The state of play of the knowledge of foreign languages among the young and adult population in Member States suggests that policy-makers should continue their efforts to widen the offer of languages taught and learned and increase the motivation of learners in order to reduce existing inequalities and to better prepare their citizens for employment opportunities and career development. Aiming for a better match between demand and supply of language instruction could ultimately result in better employment opportunities for the European workforce, in boosting economic growth and in the creation of new jobs. In this context, the Commission calls for "language policies and strategies inspired by a clear vision of the value of language skills for mobility and employability" and highlights weaknesses in the current approach to language provision. In particular, it stresses that although English is becoming *de facto* the first foreign language and is

[13] http://www.celan-platform.eu/assets/files/D1.3-Business_Needs_Report-Final.pdf

widely taught, "it is proficiency *in more than one* foreign language that will make a decisive difference in the future" (European Commission, 2012b, p. 2).

The next section begins by reviewing available evidence regarding languages for employment opportunities. In order to portray the state of play, it draws on information from employment-related reports and statistical indicators. Next, it presents results from research studies that investigate whether language knowledge brings advantages to individuals in terms of labour market opportunities. This is intended to contextualise the CRELL analyses contained in the following sections.

PART II
Foreign Language Skills and Employment Opportunities
Review of Empirical Evidence

As nowadays businesses operate in multilingual societies and/or compete in global markets, employers regard foreign language skills as a key ability for employment (European Commission, 2011) with these skills being more than ever in demand in the European labour market (EU Skills Panorama, 2014). Multiple reasons are behind these specific skills demands. In a globalised economy, there is little place for monolinguals. For instance, in sales and marketing sectors multilingualism is needed for successful negotiations. Similarly, in trading sectors professionals that are proficient in foreign languages are needed because their business activities may take place in border regions or different continents.

According to Eurobarometer data (European Commission, 2012a), more than half of Europeans report using foreign languages at work and almost half of Europeans believe that they can gain a better job due to their foreign language skills in their own country (European Commission, 2012a). According to this survey, "88% of Europeans think that knowing languages other than their mother tongue is very useful" (p.7) and 25% of respondents report using the first foreign language in conversations at work. Over 60% of Europeans believed that a main advantage of learning a new language is that this offers the possibility to work abroad. The younger generation (15 to 24 year-olds), in particular, believe that learning a new language improves their prospect of working abroad. Most importantly, more than 30% of employers across the EU countries surveyed in a Eurobarometer about graduate employability ranked foreign language skills in the top three important skills for higher education graduates over the next 5 to 10 years (EU Skills Panorama, 2014).

Nevertheless, language requirements may vary according to the scope and sector characteristics of different labour markets (European Commission, 2010). For instance, having good foreign language skills is a particular advantage in customer-facing business services (EU Skills Panorama, 2014). In the same way, foreign language skills are regarded as a priority by almost 60% of employers whose business activities expand beyond their national market, while these skills are not as crucial for employers that do not compete in international markets (European Commission, 2012a).

In sum, evidence suggests that European citizens, especially the young, and employers with international business activities perceive foreign language skills to be an asset in the labour market. Monitoring data also reflects remarkable generational differences and educational gaps with regards to foreign language knowledge, as well as significant differences in foreign language knowledge across EU Member States.

First, there is a clear generation gap regarding foreign languages skills favouring the younger population. According to Eurostat (Mejer et al., 2010), 18% of the AES 2007 respondents aged 25 to 34 reported being proficient (able to understand and produce a wide range of demanding texts and use the language flexibly) in their best known foreign language against 9% of the respondents aged 55 to 64. Second, there is also a clear education gap regarding foreign language knowledge favouring those citizens with higher educational attainment. According to the AES 2007, adults aged 25 to 64 with tertiary education perceive themselves as having higher skill levels[14] in foreign languages in every country whereas adults in the same age bracket with primary or lower secondary education report having lower levels of foreign language skills (Mejer et al., 2010). This education gap is also reflected in the number of foreign languages known. AES 2007 data reveal that those with tertiary education levels perceive themselves as having a higher level of proficiency in best known foreign language (27.4%) than those in lower education levels (5.7%) (Boateng, 2009). As expected, young and highly educated people are more likely to have good foreign language skills and efforts should be made to make high-quality foreign language provision accessible to all.

Third, there are remarkable differences of foreign language knowledge across countries. AES 2007 data also reveal existing differences in the proficiency and number of foreign languages known across countries. In some Eastern-European Member States it is the older adult population (55-64) that reports speaking more foreign languages when compared to the younger generations. These countries also show the smallest differences in proficiency levels between age groups; however, the foreign languages known differ: while the older populations speak Russian (as learning Russian was compulsory in their youth), the younger generations speak mainly English (Mejer et al., 2010; Eurostat, 2015). Additionally, Eurobarometer data show

[14] AES respondents are asked to describe their level of knowledge of a foreign language by selecting one of the following options:

- **Fair**: I can understand and use the most common everyday expressions. I use the language in relation to familiar things and situations;
- **Good**: I can understand the essentials of clear language and produce simple texts. I can describe experiences and events and communicate fairly fluently;
- **Proficient**: I can understand a wide range of demanding texts and use the language flexibly. I master the language almost completely.

that the proportion of adult citizens studying a second foreign language varies widely across Member States (European Commission, 2012a).

English is by far the most studied foreign language at all levels of education. Available data from the AES 2007 also show that English is the best known foreign language among the majority of 25-64 year-olds (Mejer et al., 2010) and the most widely spoken foreign language in EU Member States (EU Skills Panorama, 2014). However, in PT just over a half of upper secondary students (53%) were learning English in 2012.

Recruiters across Europe regard English as an important basic skill for businesses. English is particularly required for production, logistics and finance roles (European Commission, 2011). However, the European Business Forum for Multilingualism (2008c) highlights that additional languages are an advantage for employment in the business sector and that knowledge of other languages will make the difference among competitors in European labour markets. Foreign language skills other than English, such as French, German, Russian or Spanish are crucial for the engagement with labour markets where there is very little English spoken. Moreover, additional foreign language skills are also an advantage for international trade in countries such as China, France or Russia, where English is insufficient as a lingua franca (European Commission, 2011).

Labour Returns to Language Learning

Foreign language knowledge is viewed in the economics literature as a form of human capital that increases economic productivity. Frank and Bernanke (2007) define human capital as "an amalgam of factors such as education, experience, training, intelligence, energy, work habits, trustworthiness, and initiative that affect the value of a worker's marginal product" (p. 25). According to Sheffin (2003), human capital is "the stock of skills and knowledge embodied in the ability to perform labour so as to produce economic value" (p. 5). In particular, as Chiswick (2008) states, "Language skills are an important form of human capital. They satisfy the three basic requirements for human capital: they are embodied in the person; they are productive in the labour market and or in consumption; and they are created at a sacrifice of time and out-of-pocket resources" (p. 314). According to Grenier (1984), people invest in learning languages because they expect to get a return of their investment in terms of future earnings.

Distinct kinds of human capital have been proposed, with some researchers proposing two and even three different types. While Becker (1976) categorises human capital into general

and specific, Gibbons and Waldman (2004) and Hatch and Dyer (2004) propose three categories: firms-specific, task-specific and general. General human capital is "to be defined by generic knowledge and skill, not specific to a task or a company, usually accumulated through working experiences and education" (Alan at al., 2008, p. 20). Numeracy and literacy skills as measured in the Programme for the International Assessment of Adult Competencies (PIACC) for the adult population can be thought of as general knowledge that can be used in different jobs and is transferable in the sense that these skills are transversal and productive across jobs. Conversely, language skills may be more related to specific sector activities, different firms and/or industries or to particular tasks (Dae-Bong, 2009).

In the literature on the economics of education human capital has been studied in relation to the advantages it brings to the individual and to society at large. However, concerning language knowledge as a form of human capital, so far only the economic value to the individual and to enterprises has been studied. In studies specific to language skills at the individual level the economic added value of this kind of knowledge has been estimated in terms of wage premiums and probability of employment for individuals. Studies analysing the returns of language knowledge for enterprises have relied on estimates of the percentage of increase or decrease in export revenues associated with employees' knowledge of foreign languages. In the latter case, language skills in the form of human capital can be considered specific, rather than general. That is, they are considered productive in the labour market only in specific types of jobs and/or specific sector activities. For example, the Elan study (2006) found that SMEs with exporting capacity had lost a significant amount of business as a result of their employees' lack of language skills and findings indicate that some firms had lost contracts worth over € 8 million.

Most of the evidence indicating that foreign language knowledge brings advantages to individuals comes from studies that consider the wage premium associated with speaking a foreign language and, in a much smaller number of cases, also the probability of employment (Ginsburgh & Prieto-Rodriguez, 2011; Saiz & Zoido, 2005). Two different populations have been considered in these studies; first and second generation immigrants as well as natives. Importantly, in the case of immigrant populations, existing studies often use the terms foreign language and second language (L2) interchangeably. For example, the language spoken in the host country can be referred to as a foreign language, but it is a second language (L2) for an immigrant (Smith, 2014). In the case of native populations in the US, when individuals report foreign language fluency this is at times considered a bilingual situation, when more stringent criteria for considering someone bilingual should apply (see Glossary). Similarly, studies in European countries with native speaking populations might refer to the knowledge of a second

language when this language is in fact a foreign language because it is not spoken in the country. The advantage of knowing official languages that are little used or spoken in a country and its relationship with employment status has been investigated only with native populations.

Regarding the native population, in the US context the estimated foreign-language return translates into a 2 to 3% wage premium for College graduates who can speak a foreign language and to a 2.8% premium for the average individual (Saiz & Zoido, 2005). This indicates that "estimates of the impact of bilingualism on earnings are relatively small (2%–3%) and compare unfavourably with recent estimates on the returns to one extra year of general schooling (8%–14%), which may help explain current second language investment decisions of monolingual English speakers in the United States" (Saiz & Zoido, 2005, p. 524). Nonetheless, as research by Saiz and Zoido (2005) also suggests, foreign language knowledge may bring higher returns for individuals in management and in business services occupations.

Research conducted with immigrant populations in the US consistently shows that there is an increase in wages linked to good knowledge of the language of the host country (Grenier, 1984; Chiswick, 2008). For immigrants living in the US, limited English proficiency (LEP) has been found to be associated with lower wages and a lower probability of employment (Grenier, 1984). However, some studies suggest that when accounting for occupational status, LEP more strongly penalises the earnings of those in high skilled occupations (McManus, Gould, & Welch, 1983). For example, unskilled agricultural workers do not seem to be as negatively affected by LEP as those in more skilled occupations. In fact, more recent studies indicate that service workers may have a larger wage premium than agricultural workers, whereas the probability of employment does not increase by much in these two groups of workers when English proficiency increases (González, 2005). Moreover, when occupation is taken into account, LEP seems to explain wages and employment differently according to different employment sectors and labour status (employed vs. unemployed). Specifically, González (2005) found that "on average, LEP imposes an overall wage penalty that lies between 3.8 and 38.6%, and reduces the probability of finding a job by 0 to 6.5 percentage points" (p. 790).

In Europe, Saiz and Zoido (2002) show evidence of "a positive association between using a second language at work and higher earnings in the European Union. This association is present in English-speaking countries such as Ireland and the United Kingdom" (Saiz & Zoido, 2005, p.525). Williams (2011) reports significant earnings premiums for English usage at work in 12 non-English speaking European countries, as well as for the use of other languages, especially French and German. He found that the use of these languages and its related wage premium is

associated with the size of the tourism sector in different countries. For example, higher returns were found for Greece, a country with a large tourism sector. Nevertheless, Williams' (2011) findings show significant returns on earnings, between 5 and 20 percent depending on the non-English speaking country – Germany, Denmark, Netherlands, Belgium, Luxembourg, France, Italy, Greece, Spain, Austria and Finland – included in the study.

Ginsburgh and Prieto-Rodriguez (2011) also confirmed the existence of a substantial return to English proficiency for the native population in several European non-English speaking countries and the economic return to English proficiency has been corroborated by studies with minority populations in former Soviet Union countries, such as Latvia and Estonia. For example, Toomet (2011) found that skills in local languages (Estonian and Latvian) are not remunerated in these countries while English proficiency produces a significant earnings premium for Russian ethnic minority workers.

Outside the European Union, a recent study in Turkey found a positive and significant monthly wage return to proficiency in English and Russian that increases with the proficiency level (Di Paolo & Tansek, 2013). Research evidence gathered in English-speaking countries is rather limited, but for instance Henley and Jones (2005) found that adults in Wales who speak both English and Welsh have a positive wage premium when compared to those that are monolingual in one or the other language.

With respect to the probability of employment, studies with immigrant populations in Germany and in the UK (Aldashev, Gernandt & Thomsen, 2009; Dustmann & Frabbri, 2003) have shown that employment opportunities increase as language proficiency increases. More specifically, in the case of Germany high reported usage of the German language by immigrants was found to increase employment chances. In the UK a 22 percentage points' increase in the probability of employment of migrants was found to be associated with English proficiency.

It is important to note that language data in surveys or censuses used in the studies reviewed are self-reported by individuals, which raises endogeneity issues. For example, more highly educated individuals may be able to report their language knowledge more accurately than less educated ones, but an objective assessment of language knowledge skills could only be done by a direct assessment, which does not exist for the adult population. Thus, researchers working with the available datasets are constricted to data about self-reported language knowledge, which can be measured dichotomously or by levels (Chiswick, 2008) and can refer to different language skills - oral (speaking and listening) and literacy (reading and writing). In the case of studies with immigrants, where data for oral skills are usually used, Chiswick (2008) summarises the findings

as follows: "If the language variable is treated as dichotomous, that is, it takes one of two values, proficient and not proficient, the proficient group has about 15 percent higher earnings" (p. 19). Similar earning advantages for immigrants have been reported when data refer to analyses using literacy or reading and writing skills, and most likely this is the case because oral and written language skills are highly correlated (Chiswick & Repetto, 2001; Dustmann, 1994).

When information about different levels of proficiency is used, research indicates that greater proficiency is associated with higher earnings (Chiswick & Miller, 2007). For example, Chiswick (2008) reports that for results of earnings of adult men in Australia "among the foreign born, those who speak another language at home but who speak English "very well" earn about 10 percent less than those who speak only English, while those who speak it only "well" earn nearly 25 percent less" (p. 19).

In sum, existing evidence suggests that, for the general population or the average individual, the wage returns associated with language knowledge are higher in the European context than in the US, that this knowledge is more productive in specific labour sectors and that the economic returns associated with knowledge of different languages vary by country. Studies have addressed wage returns both for the general population and for immigrant populations, but the probability of employment has only been investigated with immigrant populations. In general, research conducted in a variety of countries both for immigrants and for natives has considered language knowledge as a source of general and specific human capital and the findings indicate that higher wage returns may be obtained when the use of language skills is sector or firm-specific and/or task-specific. More specifically, the studies reviewed suggest that: 1) speaking the language of the host country well is associated with higher earnings and a higher probability of employment for immigrant populations, 2) for the general population, foreign language knowledge produces a small wage premium, 3) wage premiums associated with language knowledge might vary depending on the occupation of individuals and 4) the probability of being employed versus unemployed increases with foreign language knowledge, but this evidence is limited and specific to migrant populations.

The following section uses UNESCO/OECD/Eurostat (UOE) data to examine the evolution in language learning at school registered in the last 12 years. Data are displayed using 4-year gaps and refer to the percentage of students studying none, one or two or more foreign languages in ISCED 3 for every EU Member State for which data are available.

PART III

Foreign Language Learning at School

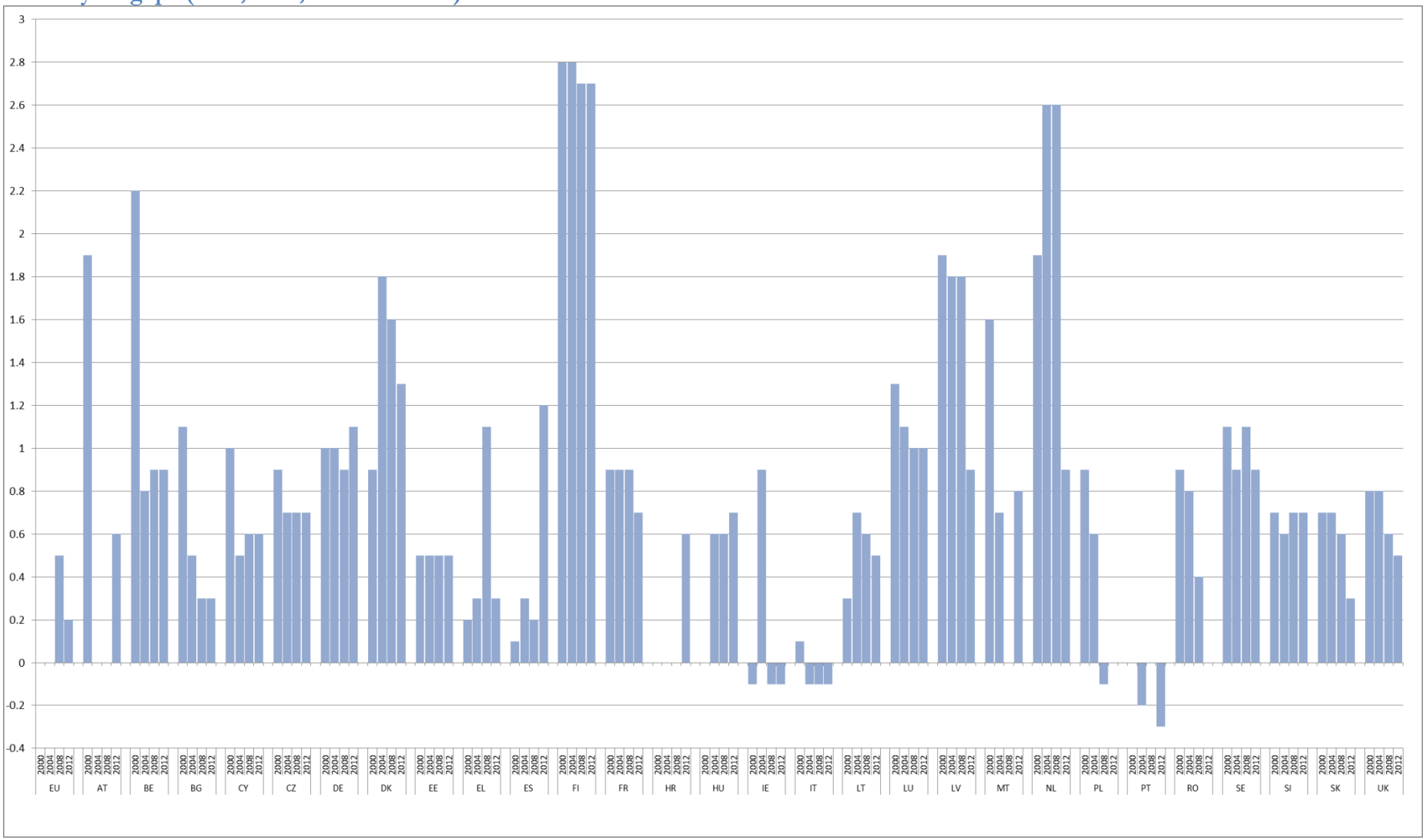
UOE Data for ISCED 3

Number of Languages Learned per Pupil over the Last 12 years

Here we focus on describing the changes across time for specific countries rather than for the EU average because the set of countries included vary at each cross-sectional time point.

Figure 1 shows that the number of languages learned by pupil in ISCED 3 is considerably higher for general than for vocational orientation in FI, LV and NL. However, the number of languages learned by pupil in ISCED 3 vocational is higher than in general in IE, IT, PL and PT. While the majority of countries show a consistent tendency to decrease the difference of number of languages learned by pupil in ISCED 3 between general and vocational orientation over the last years shown (i.e. BG, DK, FR, LT, LU, LV, SK and UK), this difference has increased favouring general orientation in HU over the last years.

Figure 1. Difference between ISCED 3 general and vocational orientation in number of languages learned per pupil in EU Member States in four-year gaps (2000, 2004, 2008 and 2012)



Source: UOE data. See Table A 1 in Annex for details on data availability and reliability.

Figure 2 shows that the number of pupils studying one foreign language has increased from 2008 to 2012 in BG, CZ, DK, EE, EL, ES, CY, LT, NL, SK and SE for general orientation and in BE, EE, CY and LT for vocational orientation. However, the number of pupils studying one foreign language has decreased within the same time period in BE, IE, IT, FR, LV, HU, RO, SI and UK for general orientation and in BG, CZ, EL, FR, IT, LU, HU, RO, SI and SK for vocational orientation.

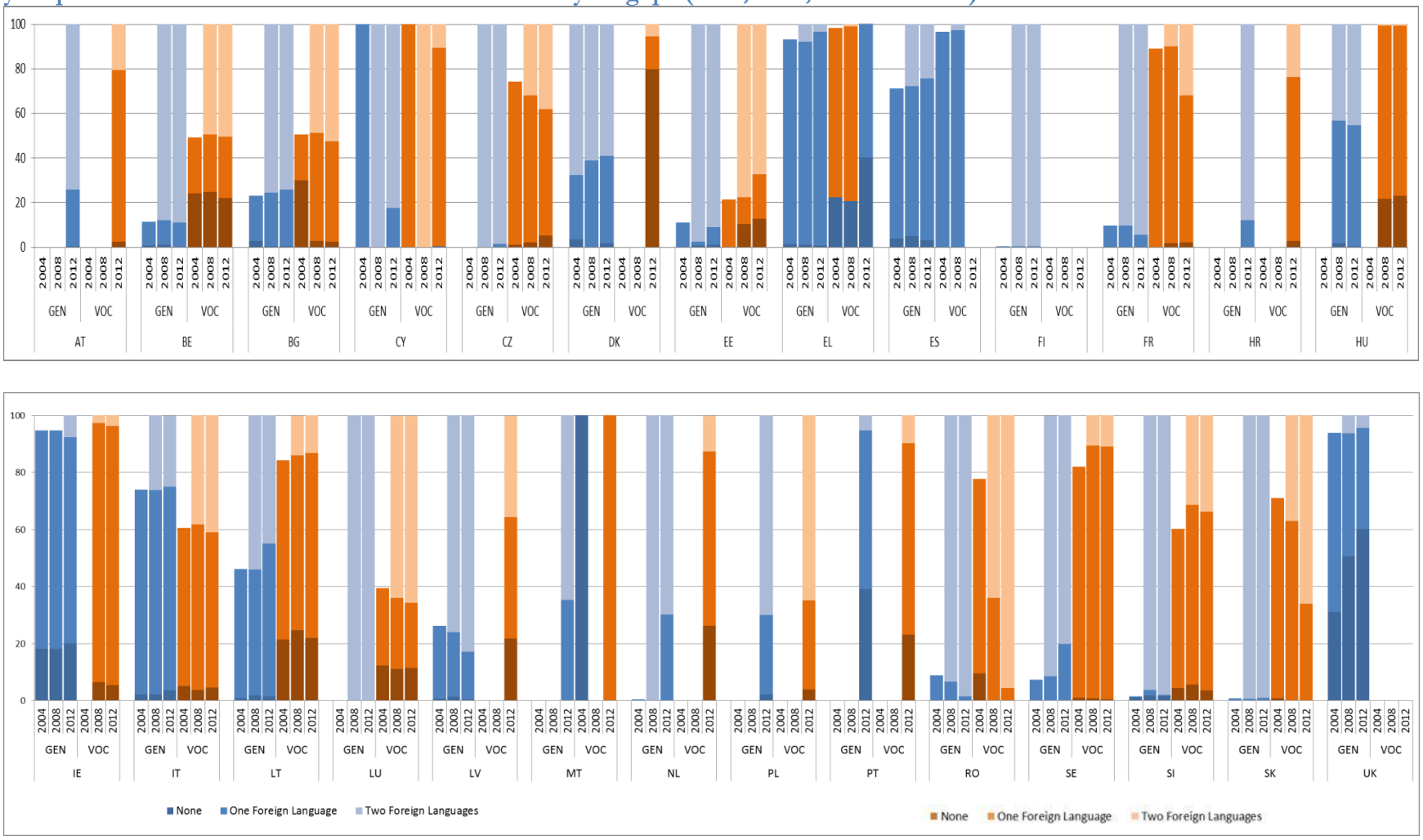
Figure 2 also shows that the number of pupils studying two foreign languages has increased from 2008 to 2012 in BE, FR, LV, HU, RO and SI for general orientation and in BE, BG, CZ, IE, FR, IT, LU, RO, SI, SK and SE for vocational orientation. However, the number of pupils studying two foreign languages has decreased from 2008 to 2012 in BG, CZ, DK, EE, IE, EL, ES, IT, CY, LT, NL, SK, SE and in the UK for general orientation and in EE, EL, CY and LT for vocational orientation. Nevertheless, although many EU Member States show a considerable increase in the number of foreign languages being studied, according to the European Survey on Language Competences (ESLC) carried out in 2011 in 14 European countries[15], only 42% of secondary school pupils are proficient (levels B1+B2 according to the Common European Framework of Reference, Council of Europe, 2011[16]) in their first foreign language and only 25% in their second foreign language. This highlights the fact that despite the emphasis made in increasing the number of languages taught the quality of foreign language instruction provided in school also needs to be monitored. Educational policy across EU Member States should not only focus on the number, but also on the quality of foreign language provision as efforts to improve language learning outcomes are needed.

[15] BE, BG, HR, EE, FR, GR, MT, NL, PL, PT, SI, ES, SE and UK-England

[16] According to the Common European Framework of Reference, being proficient in a foreign language means that the person is able to:

- understand a wide range of demanding, longer texts, and recognise implicit meaning,
- express ideas fluently and spontaneously without much obvious searching for expressions,
- use language flexibly and effectively for social, academic and professional purposes,
- produce clear, well-structured, detailed text on complex subjects, showing controlled use of organisational patterns, connectors and cohesive devices.

Figure 2. Percentage of students studying none, one or two or more foreign languages in ISCED 3 General and Vocational during the 12 year period 2000-2012 in EU Member States in four-year gaps (2000, 2004, 2008 and 2012)



Source: UOE data. See Table A 2 in the Annex for details on data availability and reliability. Vocational includes prevocational and vocational education.

PART IV

Foreign Language Knowledge of Adults

Data Source

The Adult Education Survey (AES) is a European survey developed by European countries and by the statistical office of the European Communities (Eurostat). It gathers data on education and training of the adult population living in private households in Europe, providing comparable microdata. The AES was first launched in 2007 as a pilot study and successive rounds collect anonymous data in five-year cycles. The first official data collection took place between 2005 and 2008 and covered the following Member States: AT, BE, BG, CZ, DK, DE, EE, IE, EL, ES, FR, HR, IT, CY, LV, LT, HU, NL, PL, PT, RO, SI, SK, FI, SE and UK. The second AES data collection took place between 2011 and 2012 and approximately 225,000 individuals from 30 different countries were sampled (AES, 2011). Among these, twenty-seven EU Member States implemented the survey (AT, BE, BG, CZ, DK, DE, EE, IE, EL, ES, FR, IT, CY, LV, LT, LU, HU, MT, NL, PL, PT, RO, SI, SK, FI, SE, UK). For the purposes of this study, microdata from the AES 2011 will be used.

The AES allows for the investigation of possible advantages or lack thereof associated with language knowledge in the labour market, in particular concerning employment status[17]. The breadth of information collected on individual characteristics in conjunction with information on foreign language knowledge and the labour status of individuals allows for the control of confounding factors such as the education level completed, age, gender and parental education as a proxy for socio-economic status.

The AES survey collects information about the self-assessed knowledge of languages of the individuals interviewed. This includes information about both the mother tongue and the foreign languages known by surveyed individuals. In the AES 2011, two questions concern the first (*LANGMOTH1*) and – if applicable – the second (*LANGMOTH2*) mother tongue. According to Eurostat (2013), the mother tongue is "the first language learned at home in childhood and still understood by the individual at the time of the survey". It is therefore the language used for communication that is still alive and that the person is still competent to use

[17] Although the AES inquires about the net monthly income of the household, it does not collect information on earnings at the individual level. Therefore, it is not possible to investigate this labour market outcome.

proficiently[18]. Another set of questions addresses all other languages known by the respondents, except for their mother tongue(s). Accordingly, information about the number of other languages known is collected (variable *LANGUSED*); up to seven of these languages can be listed (variables *LANGUSED_1-LANGUSED_7*).

Finally, information about the two best known international languages[19] other than the mother tongue is collected (*INTLANGBEST1-2*), including the self-assessed level of knowledge (*LANGLEVEL1-2*). International languages are defined as languages spoken in two or more countries. According to the AES manual (see Eurostat, 2013), however, it is recommended that the most taught languages in Europe be prioritised (English, French, German, Spanish, Russian), though other international languages can be included. It should be noted that throughout the report we will refer to what the AES questionnaire calls 'international languages' as 'foreign languages'. This choice is motivated by the fact that the most taught foreign languages in the European Union were the target of inquiry in the AES surveys and by the fact that this designation follows more closely the terminology used by Eurostat in their published data and in studies about the EU population and social conditions (Mejer, Boateng & Turchetti, 2010).

The classification of foreign language skill levels is based on the Council of Europe scale and includes three levels:

- Fair: "I can understand and use the most common everyday expressions. I use the language in relation to familiar things and situations".
- Good: "I can understand the essential of clear language and produce simple text. I can describe experiences and events and communicate fairly fluently."
- Proficient: "I can understand a wide range of demanding texts and use the language flexibly. I master the language almost completely".

According to this classification, language knowledge in the AES is reported by proficiency levels but information is not clear regarding the level of oral skills - understanding

[18] As reported in Eurostat (2013), "The term 'mother tongue' should not be interpreted to mean that it is the language of one's mother. In bilingual homes the language of the father could be the most dominant, the one used for in-house communication. Or the languages of both parents can be used; in which case the person has more than one mother tongue. In some cases or in a few countries mother tongue can be referred to as 'first language'. There could also be cases where the mother or/and both parents of the respondent died when the respondent was a child; in that case, 'mother tongue' is the language used by the people that raised the respondent. 'Mother' in the term 'mother tongue' has the meaning of origin."

[19] In order to avoid confusion, e.g. for respondents of different cultural backgrounds, the AES questionnaire does not use the term 'foreign language' to describe languages other than the mother tongue. This aimed at avoiding misunderstandings; for example, when there is more than one official language used in a country and it does not coincide with mother tongue(s), then it might be misleading to refer to these languages as 'foreign languages'.

and speaking - and literacy skill levels - reading and writing. The lowest level, labelled as *fair* refers to understanding and using the language, but no indication is given as to whether this understanding and usage encompass only oral skills, written skills or both. The intermediate level, *good*, refers to understanding, also irrespective of whether language input is oral or written, and to the ability to produce simple texts. The highest level refers to understanding demanding texts and using the language flexibly. Thus, this survey clearly contemplates oral and literacy skills, but it does not do so in an all-inclusive and unambiguous way for the different language levels.

It should be noted that some countries decided not to include some or all of the questions about language knowledge in their respective national questionnaires. More details on these cases are presented in Table 1.

Given the high share of missing information for RO in 2011, this country is excluded from the analyses, as its results cannot be published[20]. Similarly, since no language information was collected for the UK in 2011, this country is not considered in the analyses. The other data limitations highlighted in the table should be considered as caveats in the analysis[21].

According to the purpose of this report, the sample is restricted to individuals aged 25-64. This is also the age group that is covered in all countries in the AES 2011. In the survey, some countries sampled either younger - 16-24 - or older - 65-75 - age groups, or both. Whereas the younger group is potentially still in education (and therefore not yet in the labour market) and thus more likely to be studying foreign languages, the older group is likely to be out of the labour force. Thus, given that we are investigating the relationship between foreign language skills and employment status, individuals aged 25-64 are considered the target population that is most likely to be employed or seeking employment.

[20] According to Eurostat guidelines for publication, if non-response for an item exceeds 50% results may not be published.

[21] The data limitations presented here concern information about languages. It should be pointed out, however, that IE has a very high incidence of missing information on labour market status in AES 2011, with over 50% of non-response in the relevant question. While it is possible to report information about language knowledge for the country, any analysis on labour market issues is likely to be unreliable. Thus, this country was excluded from this study on employment chances.

Table 1. Data availability on languages known in EU Member States in AES 2011

EU Member States	Code	Participated in the survey	Information on languages
Austria	AT	X	
Belgium	BE	X	
Bulgaria	BG	X	
Cyprus	CY	X	Missing info on second best FL if langused=>2
Czech Republic	CZ	X	
Denmark	DK	X	
Estonia	EE	X	
Finland	FI	X	
France	FR	X	92.5% missing information on second MT
Germany	DE	X	
Greece	EL	X	
Hungary	HU	X	
Ireland	IE	X	Missing information on – kept in descriptive statistics, dropped in the regression analyses
Italy	IT	X	
Latvia	LV	X	
Lithuania	LT	X	
Luxembourg	LU	X	
Malta	MT	X	
Netherlands	NL	X	Missing info on best FL if langused=1 and second best FL if langused=2
Poland	PL	X	
Portugal	PT	X	
Romania	RO	X	62% missing information - dropped
Slovakia	SK	X	
Slovenia	SI	X	
Spain	ES	X	
Sweden	SE	X	
United Kingdom	UK	X	No information collected - dropped

Source: Eurostat's AES manual and CRELL analyses. FL is the acronym for foreign language and MT is the acronym for mother tongue.

The existing sample of individuals aged 25-64 in the AES 2011 wave is presented in Table 2. In some countries, information on language knowledge is missing for a few individuals and these were excluded from the analysis. We report the number of cases in Table 2, together with the working sample for the 25 EU Member States for which language data are available and reliable.

Table 2. Sample size for participating EU Member States in AES 2011

COUNTRY	Full sample	Missing information on language knowledge		Available - Final sample for analyses	
	N.	N.	%	N.	%
AT	5,073	0	0.00	5,073	100.00
BE	5,526	0	0.00	5,526	100.00
BG	5,447	51	0.94	5,396	99.06
CY	2,404	0	0.00	2,404	100.00
CZ	7,969	1	0.01	7,968	99.99
DE	6,213	15	0.24	6,198	99.76
DK	3,660	1	0.03	3,659	99.97
EE	3,324	0	0.00	3,324	100.00
EL	5,420	0	0.00	5,420	100.00
ES	15,816	416	2.63	15,400	97.37
FI	3,605	0	0.00	3,605	100.00
FR	12,517	0	0.00	12,517	100.00
HU	7,367	0	0.00	7,367	100.00
IE	12,582	669	5.32	11,913	94.68
IT	8,703	0	0.00	8,703	100.00
LT	4,251	0	0.00	4,251	100.00
LU	3,310	167	5.05	3,143	94.95
LV	5,048	0	0.00	5,048	100.00
MT	2,882	0	0.00	2,882	100.00
NL	3,036	17	0.56	3,019	99.44
PL	22,522	0	0.00	22,522	100.00
PT	11,308	0	0.00	11,308	100.00
SE	3,096	6	0.19	3,090	99.81
SI	4,013	0	0.00	4,013	100.00
SK	4,255	0	0.00	4,255	100.00

Source: CRELL calculations based on AES 2011 data.

Data Analyses

An Overview of Foreign Language Knowledge and Proficiency in EU Member States

Four main indicators of language knowledge are addressed in this section. First, the number of languages known by individuals, which can be expressed either as a categorical variable (no language; one language; two languages; three or more languages), or as the average number of languages known. These figures, however, do not say anything about the level of knowledge of the foreign languages. Hence, next we present an overview of the proficiency level reported, showing the share of individuals who know at least one foreign language proficiently, among those who know a foreign language, and as a share of the entire population.

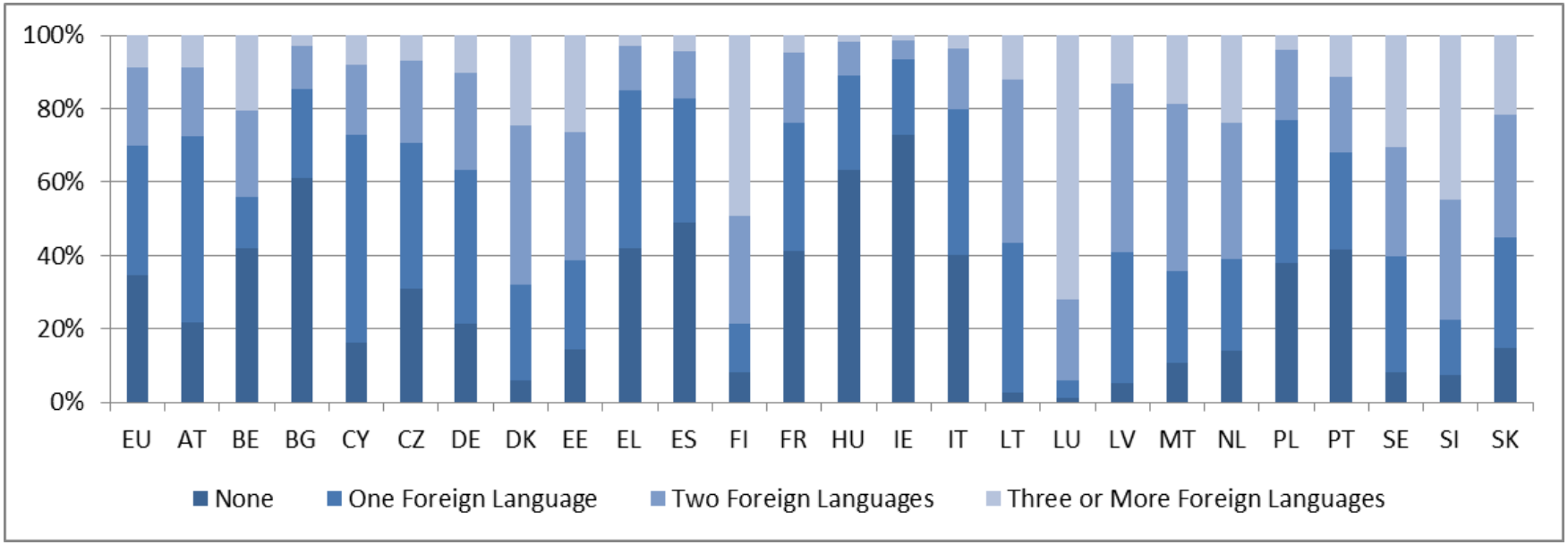
In order to portray the knowledge of foreign languages of the population in the countries considered, we disaggregate the sample along a number of dimensions, namely sex, age group (25-34, 35-54, 55-64), level of education (including orientation of study), employment status (employed, unemployed or inactive), individuals employed as employees and type of contract (employees with fixed-term contract and permanent employees)[22].

How many foreign languages?

As Figure 3 and Table A 3 in the Annex show, adults in the EU know, on average, one foreign language. However, there are wide variations among countries. In the EU Member States considered in the AES 2011 survey, on average, around 34% of individuals aged 25-64 report not knowing any foreign language; around the same share of individuals report knowing one foreign language, while less than 10% say they know three or more foreign languages. The country where adults report knowing more languages is LU (with around 3 foreign languages known on average and 94% of the population knowing at least 2 languages), followed by FI and SI. In contrast, 73% of the population in IE reports knowing no foreign language. HU and BG also show a very low average number of languages known (around 0.5), and a considerable share of the population (above 60%) knows no foreign language.

[22] The EU average presented in each of the following tables refers to the average of the countries for which data are available. For example, information on Vocational Education and Training (VET/non-VET) orientation of study is available for a reduced set of countries and for this reason the EU average reported in the corresponding table refers to a sub-set of countries.

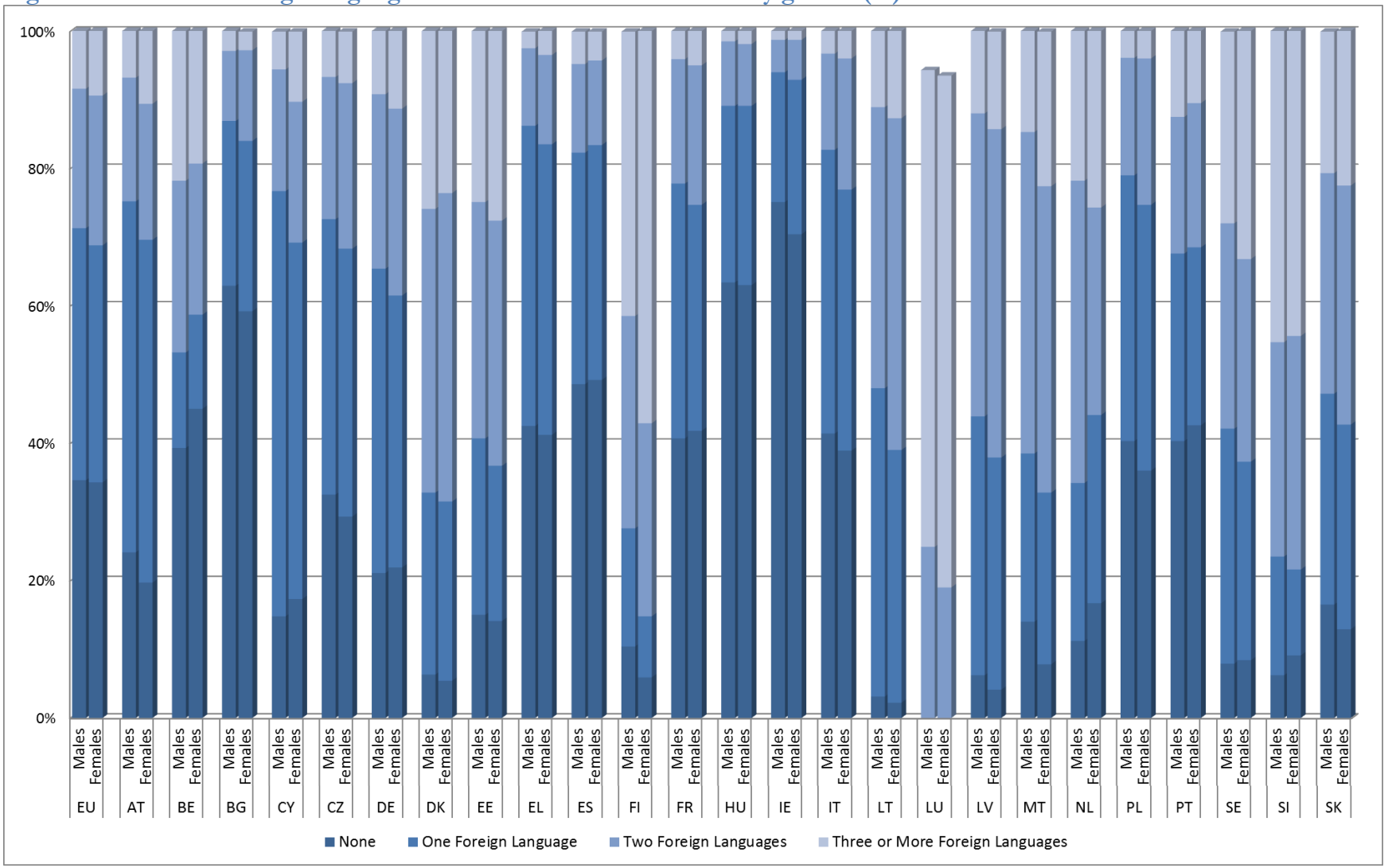
Figure 3. Number of foreign languages known in EU Member States (%)



Source: CRELL calculations based on AES 2011 data. See Table A 3 in Annex for details and data reliability.

When considering males and females separately for all Member States included in the analyses, no significant differences are apparent. As Figure 4 and Table A 4 in the Annex show, in many countries women report knowing 2 or 3+ languages more than men, but differences are small.

Figure 4. Number of foreign languages known in EU Member States by gender (%)

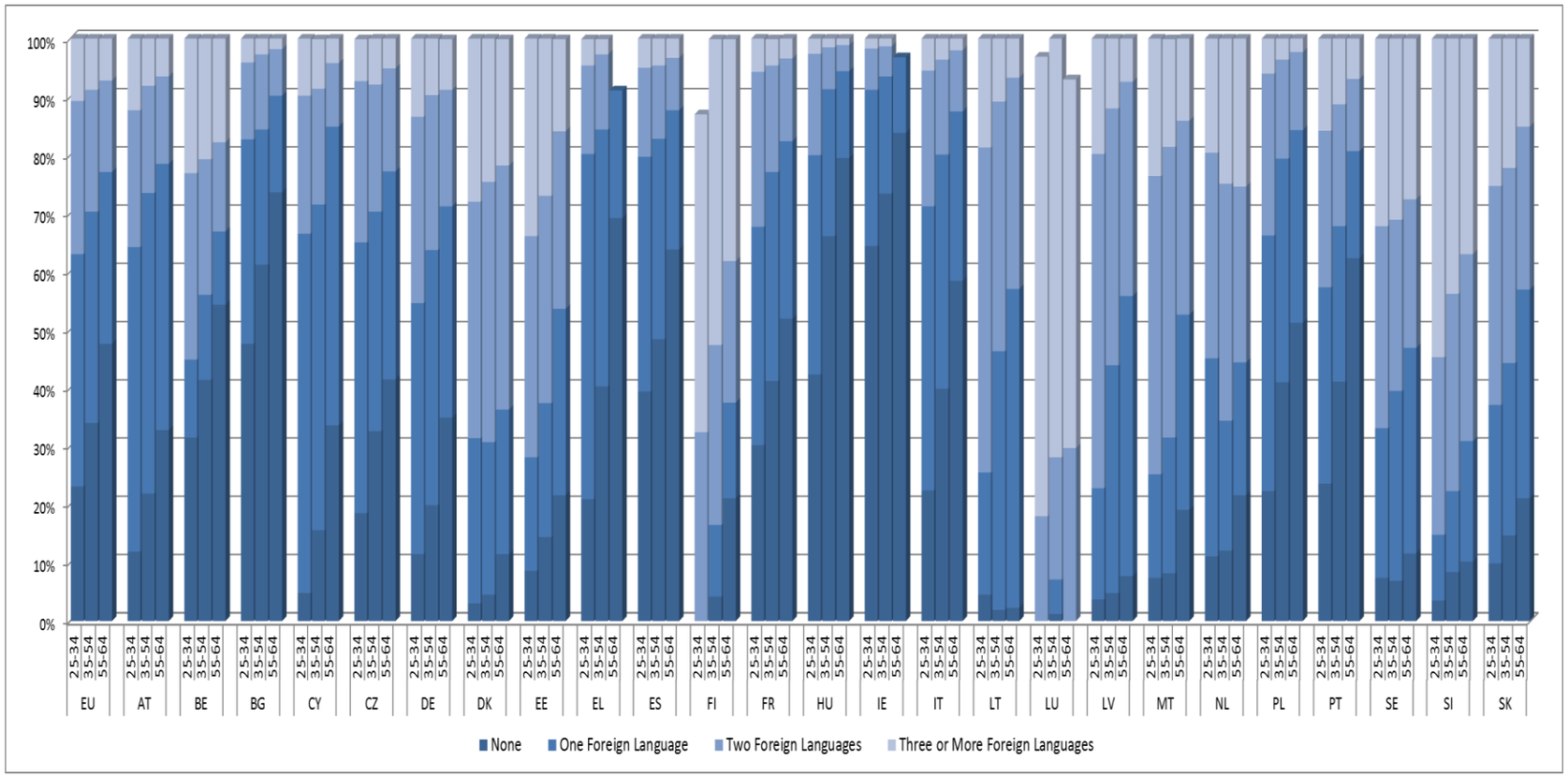


Source: CRELL calculations based on AES 2011 data. See Table A 4 in Annex for details on data availability and reliability.

Language knowledge is likely to vary depending on age. As previously mentioned, in recent years the European Commission has supported efforts to promote learning of foreign languages in the EU, starting with teaching children two languages from an early age. While it might be too soon to see the effects of these efforts in our data (since we consider only working-age population), it is reasonable to expect young people to be more familiar with foreign languages. We therefore look at the distribution of the population by number of languages known, disaggregating by age group (25-34, 35-54 and 55-64).

What emerges from Figure 5 (and Table A 5 in the Annex) is that indeed, in the EU as a whole, the younger the age group, the more languages individuals know. Only 23% of the individuals in the youngest age group (25-34) know no foreign languages, while about half of corresponding share among the age group 55-64 know no languages. Thirty seven percent of those aged 25-34 report knowing two or more foreign languages, a figure that decreases to 30% among those aged 35-54 and to 23% for 55-64 year-olds. Moreover, in all EU countries the average number of languages known is higher in the 25-34 age group than in the older age groups, except in NL where the 35-54 age group knows more languages than the younger cohort.

Figure 5. Number of foreign languages known in EU Member States by age groups (%)



Source: CRELL calculations based on AES 2011 data. Notes: See Table A 5 in Annex for details on data availability and reliability.

These results can be connected to the increasing share of tertiary graduates in the population. More recent age cohorts are on average more highly educated, and it is likely that this also implies a better knowledge of foreign languages. Additionally, as shown in Part III of this report, the available data for the average number of languages learned in ISCED 3 between 2000 and 2012 has increased in 12 out of 16 EU countries from 2000 to 2012. Although only data from earlier points in time could render a reliable country-level trend analyses, language learning has probably begun to be more present in secondary schools prior to the beginning of the 21th century. Following Eurostat's categories for examining the language data in AES, we distinguish between the three standard levels of educational attainment, namely low (including ISCED 1997 levels 0-2, i.e. primary or lower secondary education), medium (ISCED 1997 levels 3-4, i.e. upper secondary and post-secondary non-tertiary education) or high (ISCED 1997 levels 5 or higher, i.e. tertiary education)[23].

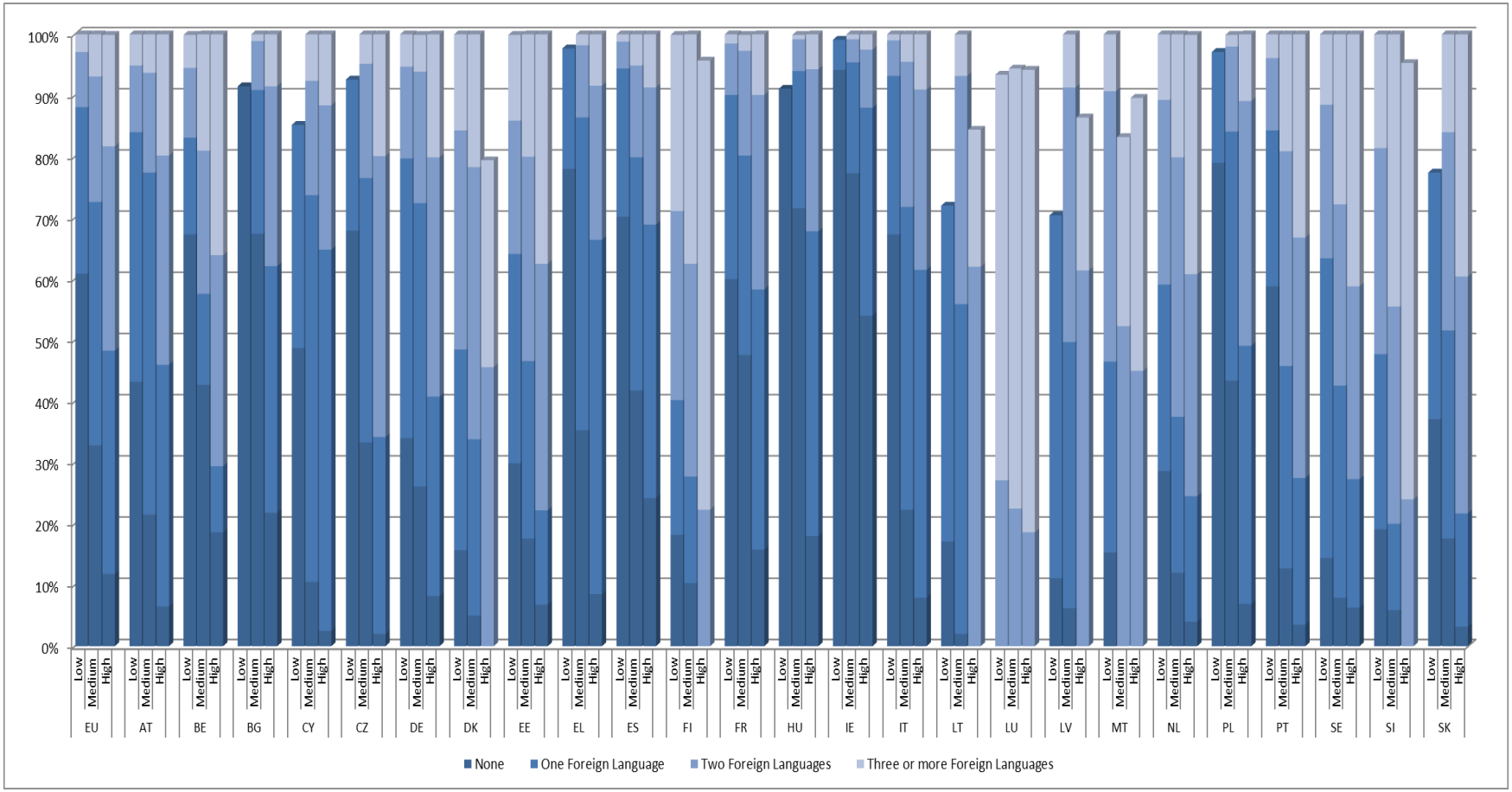
For all countries considered the average number of languages known increases with the level of educational attainment. As Figure 6 and Table A 6 in the Annex show, on average, in the EU more highly educated individuals know around three times more languages than low-educated ones. Sixty one percent of the low-educated know no foreign languages, while the same share decreases to 33% among those with medium education, and to 12% for tertiary graduates. On the other hand, while only 10% of the low-educated know two or more languages, 33% of the highly educated do so.

Considerable differences among countries remain when disaggregating by educational level. However, the pattern of increasing language knowledge with higher levels of qualification is evident in all EU countries[24].

[23] The educational level ISCED 3C short is usually assimilated to ISCED level 2, and is therefore included in the low education category. For the purposes of this report, however, we follow the classification used by Eurostat for the statistics on foreign languages provided online, and therefore include it in the category medium education.

[24] When disaggregating by both number of foreign languages known and educational attainment, sample size by country often becomes small; for this reason, figures cannot be published for some of the countries considered in the analysis (see Table A 6 in Annex for details).

Figure 6. Number of foreign languages known in EU Member States by level of educational attainment (%)



Source: CRELL calculations based on AES 2011 data. See Table A 6 in Annex for details on data availability and reliability.

A lot of attention has been devoted in recent years to the relevance of Vocational Education and Training (VET). For young individuals who do not wish to continue their studies in tertiary education, vocational education potentially provides better employment prospects than general, more academically oriented upper secondary education (see OECD, 2013; Cedefop, 2012; CRELL, 2015).

It is therefore interesting to look at the difference in foreign language knowledge – among individuals with secondary education – between graduates with general and vocational orientation of study. The variable used for this purpose, *HATVOC* (orientation of the highest level of education or training successfully completed[25]), is an optional variable in the AES 2011 survey that was not included in the questionnaires for CZ, DK, FI, LT, LU and MT. Thus, we present results only for the remaining countries. Also, the information on orientation of study was asked in the survey only for individuals with qualifications completed within the last 20 years of the reference year[26]. Table A 8 in the Annex details sample sizes for this variable by country, distinguishing individuals for which it is not applicable (i.e. individuals with educational level other than secondary, or who graduated more than 20 years before the survey) and countries where the question was not included in the questionnaire.

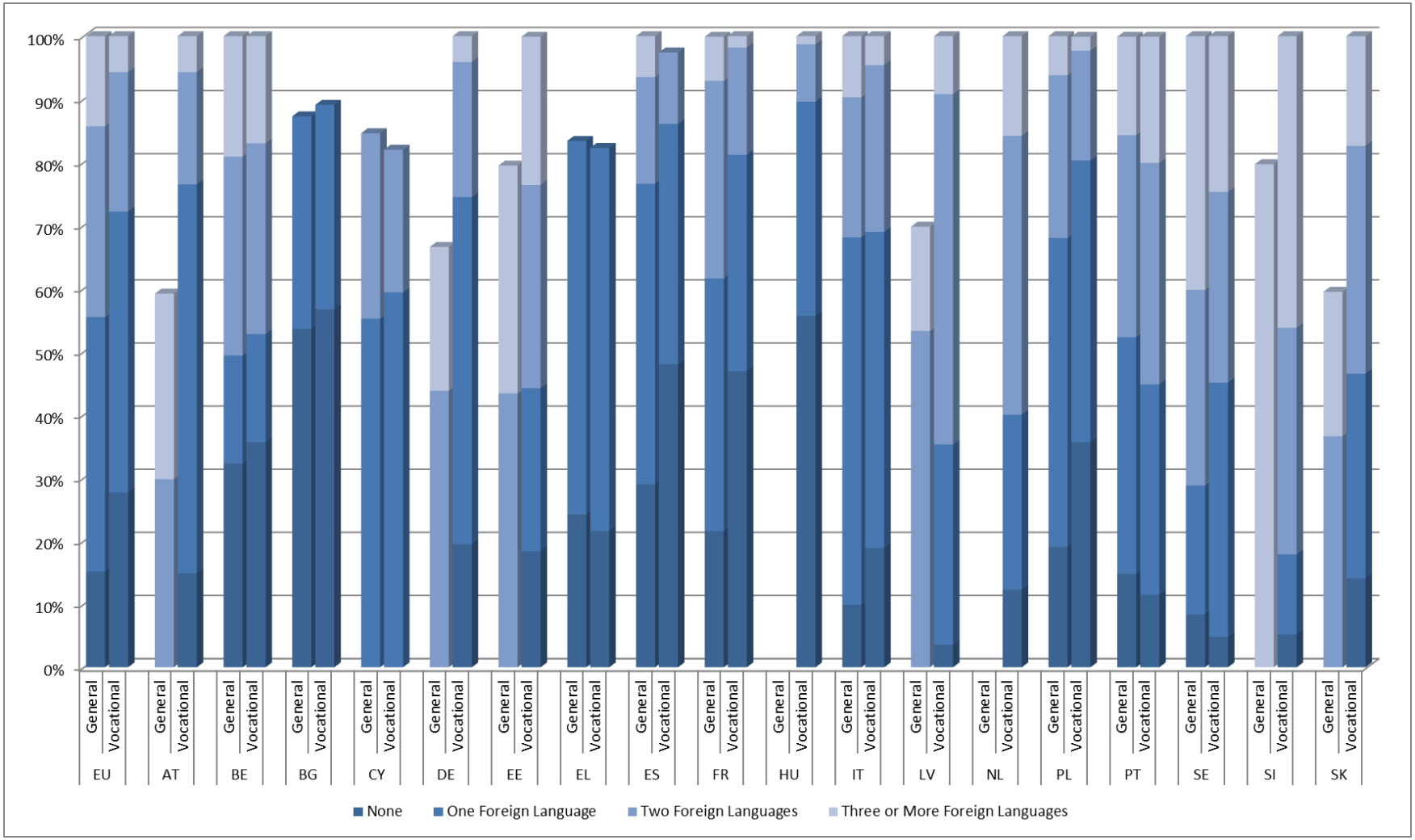
Figure 7 and Table A 7 in the Annex show that in the EU, on average, secondary education graduates with general orientation of study are more likely to know more foreign languages than graduates from vocational programmes: among VET graduates, 28% of individuals know no foreign language, and 45% only one. Among their general education counterparts, these shares decrease to 15 and 40%, respectively. While limited sample size prevents a clear comparison across countries and even within the same countries (e.g. values for HU and NL are not presented for general orientation of study because data is either not available or not reliable due to very small sample size), this pattern seems to be present in most Member States. This follows the same pattern of results reported in the foreign language learning at

[25] According to the AES handbook, "general education' is defined as the education which is mainly designed to lead participants to a deeper understanding of a subject or group of subjects, especially, but not necessarily, with a view to preparing participants for further (additional) education at the same or higher level. Successful completion of these programmes may or may not provide the participants with a labour-market relevant qualification at this level. These programmes are typically school-based. Programmes with a general orientation and not focusing on a particular specialisation should be classified in this category. 'Vocational or technical education' is defined as the education which is mainly designed to lead participants to acquire the practical skills, know-how and understanding necessary for employment in a particular occupation or trade or class of occupations or trades. Successful completion of such programmes lead to a labour-market relevant vocational qualification recognised by the competent authorities in the country in which it is obtained (e.g. Ministry of Education, employers' associations, etc.)".

[26] While the variable *HATVOC* is available for IE, there is no information about the year of completion of the highest level of education, so when considering orientation of study, this country was excluded. For ES, there are 25% of missing responses in this variable.

school section of this report, which shows that in ISCED 3 more languages tend to be learned in general than in vocational education.

Figure 7. Number of foreign languages known in EU Member States by orientation of study in secondary education (%)



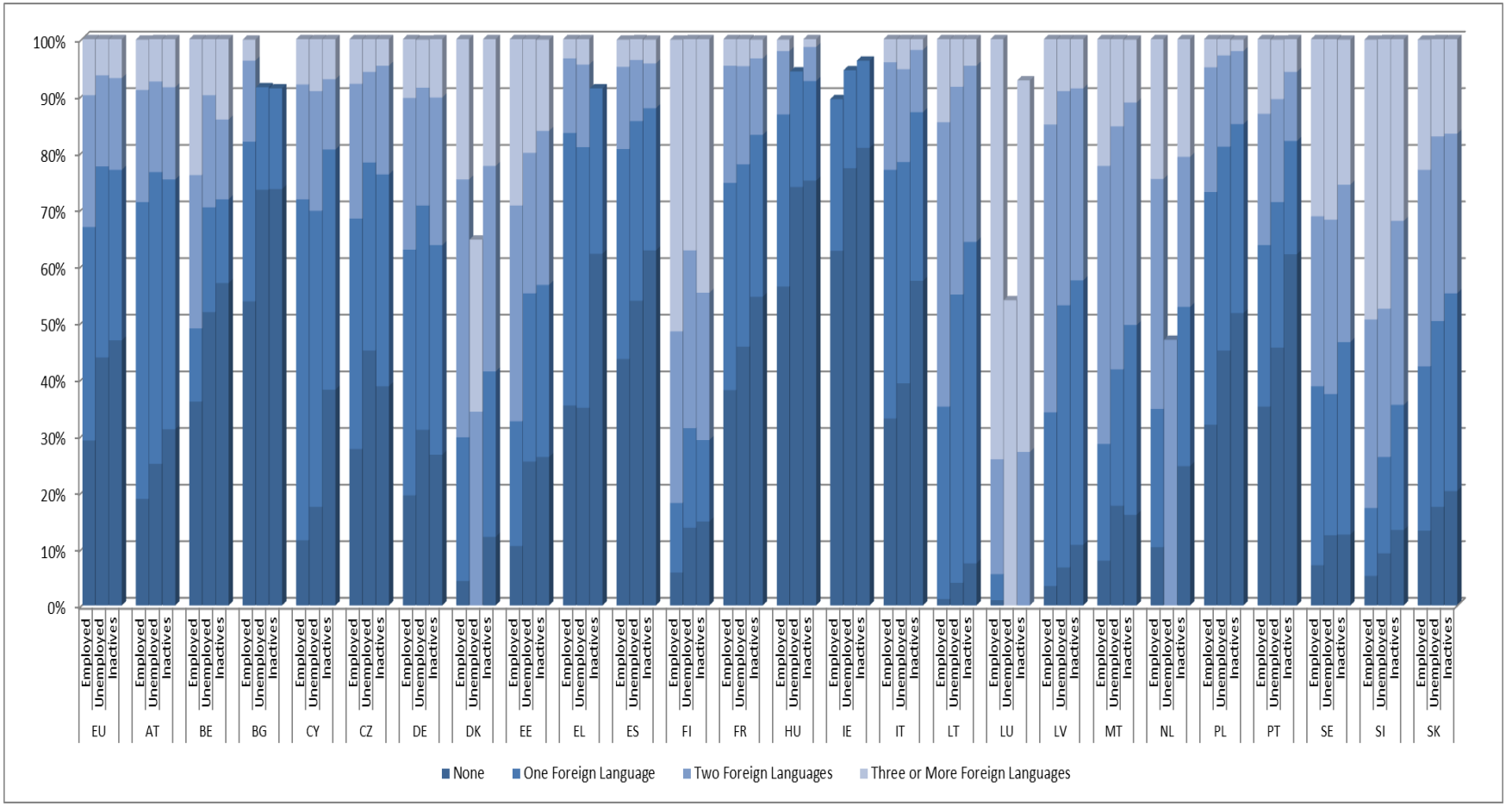
Source: CRELL calculations based on AES 2011 data. See Table A 7 in the Annex for details on data availability and reliability.

In order to portray the relationship between language knowledge and the labour market outcomes of individuals, we present an overview of language skills disaggregating the population by employment status. A distinction is made among three possible labour market conditions, i.e. employment, unemployment and inactivity. An employed individual is defined in the AES 2011 manual (Eurostat, 2013) as someone who is carrying out a job or profession, including unpaid work for a family business or holding, including an apprenticeship or paid traineeship, etc. Inactive include the following categories (as defined in the AES questionnaire): pupils, students, those in further training; those undergoing an unpaid work experience; those in retirement or early retirement or having given up a business; those permanently disabled; those in compulsory military service; those fulfilling domestic tasks and other inactive persons. AES questionnaires aim to capture a person's perception of his or her main activity at the time of inquiry; the definitions adopted therefore differ from International Labour Organization (ILO) and Eurostat official definitions that are based on more objective conditions[27].

As Figure 8 and Table A 9 in the Annex show, employed individuals in Member States know, on average, a higher number of foreign languages than unemployed and inactive ones (1.2 vs. 0.9). This pattern is found in most countries, but some present different results. For example, EL and SE do not show consistent differences between those in employment and those not employed in relation to foreign language knowledge.

[27] As explained in Eurostat (2013), "according to the International Labour Organisation, employed persons are those aged 15 and over who during the reference week did any type of work for pay, profit or family gain for at least one hour, or were not at work but had a job or business from which they were temporarily absent because of, e.g., illness, holidays, industrial dispute and education or training. Unemployed persons comprise persons aged 15 to 74 who were without work during the reference week, were currently available for work and were either actively seeking work or who found a job to start within the next three months." The self-reported employment status was considered as more relevant for the AES survey; however, it is acknowledged that "a preliminary analysis on the LFS data shows large discrepancies in many countries between the self-declared and the ILO definition of unemployment", and that there is room for improvement in the use of self-declared status, in particular as far as the concept of unemployment is concerned.

Figure 8. Number of foreign languages known by employment status (%)



Source: CRELL calculations based on AES 2011 data. See Table A 9 in Annex for details on data availability and reliability.

Which foreign languages are most widely known?

Table 3 presents, for each EU Member State in the survey, the share of individuals in the population who reported knowing one of the five most commonly taught foreign languages (English, French, German, Spanish and Russian)[28]. English, German and French are the most widely known foreign languages in Europe. Knowledge of English is reported by over 20% of adults in the 25 EU Member States. The highest percentage of adults with knowledge of English is found in FI, DK and LU (88% and 89%). Moreover, in 12 countries more than 50% of adults report knowing English. After English, German is the second most widely known foreign language (14 countries) with more than 15 % of 25-64 year-olds reporting German as one of the languages they know. The highest percentage of adults reporting knowledge of German is in LU, DK and NL (55 % to 77 %). While Russian is the language known by a larger percentage of adults overall, French is reportedly known in a larger number of countries. Apart from the Member States where French is one of the official languages, such as BE and LU, PT is also a country with one of the highest percentages of adults that know French (values varying between 75% and 32%). This can explain the high percentages found for French in these countries. Similarly, in LU, DE and FR the percentage of adults reporting knowing the official languages of the respective countries as foreign languages may reflect responses of immigrants in those countries. In ES the percentage of adults that know Spanish may be related to the knowledge of regional languages, like Catalan and Basque, as mother tongues. Some speakers of these languages may have responded that Spanish was a foreign language for them. Knowledge of Spanish in Europe is generally low, when compared with English, German, French and Russian.

[28] We refer here to general self-reported knowledge of the language, at any level.

Table 3. Percentage of adults knowing specific foreign languages in AES 2011

COUNTRY	Self-perceived foreign language knowledge of adults (%)				
	English	French	German	Spanish	Russian
AT	64	14.2	15.5	4.2	1.9
BE	47.6	34.8	18.5	5.9	(0.6)
BG	23.4	3.5	5.6	(0.9)	18.3
CY	75.6	8.4	3.9	3.0	5.2
CZ	35.9	2.6	31	1.4	28.9
DE	65.8	17.8	13.6	6.3	9.1
DK	88.9	9.2	55.9	3.6	(0.6)
EE	57.9	1.5	15.9	(1.2)	58.2
EL	51.2	7.8	4.7	(1.6)	1
ES	30.4	13	2.5	13	0.5
FI	89	15.4	38.1	11.6	11.6
FR	47.1	8.2	8.6	14.3	0.5
HU	24.3	1.5	16	(0.4)	2.6
IE	4.8	13.9	2.6	1.7	0.7
IT	44.5	22.6	5	4.2	0.5
LT	37.3	2.9	12.6	(0.6)	83.4
LU	88.2	75.5	77	15.5	(1.1)
LV	48.8	1.7	18.2	(0.8)	56.6
MT	81.8	16.9	3.9	2.9	:
NL	80.8	23.2	55.7	6.4	:
PL	32.1	2.8	18	0.9	32.2
PT	42.7	31.8	3	21.0	0.4
SE	86.9	16	34.6	11.0	2.4
SI	63.5	5.1	46.9	4.7	6.0
SK	33.8	2.4	29.8	(0.9)	34.5
EU average	48.9	14	14.1	7.1	8.3

Source: CRELL calculations based on AES 2011 data. Notes: "()" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size.

What is the level of knowledge of the foreign languages known?

The number of self-reported foreign languages known is one of the relevant dimensions to be taken into account in investigating the relationship between foreign language knowledge and the likelihood of employment. A second dimension, which is just as relevant or potentially more relevant according to the available research evidence previously presented, is how well individuals know a foreign language. First, we present in the second column of Table 4 the share of individuals who declare being proficient in one of the two best-known foreign languages known[29]. In the EU as a whole, around 25% of individuals who know one or more foreign languages, declare that they know at least one of them at the proficient level as defined in the AES. Some countries perform significantly better than the average: in LU the share reaches 73.5%, but also in MT and LV the share is over 50%. At the opposite end, the corresponding percentage is less than 20% in CZ, IE, IT and PL[30].

These figures take into account only individuals who know at least one foreign language. As we saw in the previous section, however, the share of people who know at least one language varies widely across Member States. Thus, the third column of Table 4 includes the share of proficient individuals considering the total population - taking into account at the denominator also those who do not know any foreign language - since this indicator provides a more comprehensive picture of the level of language knowledge in a country. The share of proficient individuals in the EU, when calculated this way, is 16%, on average. In many instances, best and worst performing countries remain the same, but it is interesting to note that while in some countries the shares are very close (e.g. DK, LT and LU), in others the incidence of individuals knowing no foreign languages drives down the figures considerably (e.g. ES, NL and HU).

[29] Instead of considering only the first foreign language (variable *INTLANGBEST1*), we consider both foreign languages reported as best-known and for which the level of knowledge is collected (i.e. we consider jointly variables *INTLANGBEST1* and 2). This is because "first best-known" and "second best-known" languages do not always appear to be reported in order of decreasing proficiency. We therefore consider individuals who report being proficient (according to the scale explained in the data section) on either one of the two.

[30] As mentioned in the table showing data availability by country, CY and NL present some missing information on the level of the foreign languages known; this implies that the figures concerning these countries might be underestimating the actual language skill level of the population.

Table 4. Share of individuals who know a foreign language proficiently in EU Member States

COUNTRY	Of those who know a FL	Of the total population
AT	0.302	0.234
BE	0.308	0.175
BG	0.228	0.088
CY	0.416	0.33
CZ	0.168	0.116
DE	0.249	0.195
DK	0.395	0.371
EE	0.354	0.302
EL	0.216	0.125
ES	0.292	0.144
FI	0.299	0.268
FR	0.193	0.113
HU	0.237	0.082
IE	0.175	0.048
IT	0.143	0.086
LT	0.496	0.483
LU	0.735	0.716
LV	0.544	0.516
MT	0.543	0.484
NL	0.387	0.235
PL	0.133	0.082
PT	0.271	0.158
SE	0.487	0.447
SI	0.491	0.454
SK	0.357	0.305
EU average	0.247	0.158

Source: CRELL calculations based on AES 2011 data. FL is the acronym for foreign language.

Table 4 presents the last indicator - the number of individuals who know a foreign language proficiently as a share of the total population - disaggregating the population along different dimensions, namely gender, age and level of educational attainment. As shown in Figure 9 and Table A 10 in the Annex, while in terms of the number of foreign languages known no consistent gender differences are visible, some gaps emerge when we look at the share of proficient individuals. Whereas for the EU as a whole figures are very close, in DK, NL and SI men are considerably more likely to be proficient than women (with a 7-8 percentage point – p.p. – difference). In MT, the opposite is true.

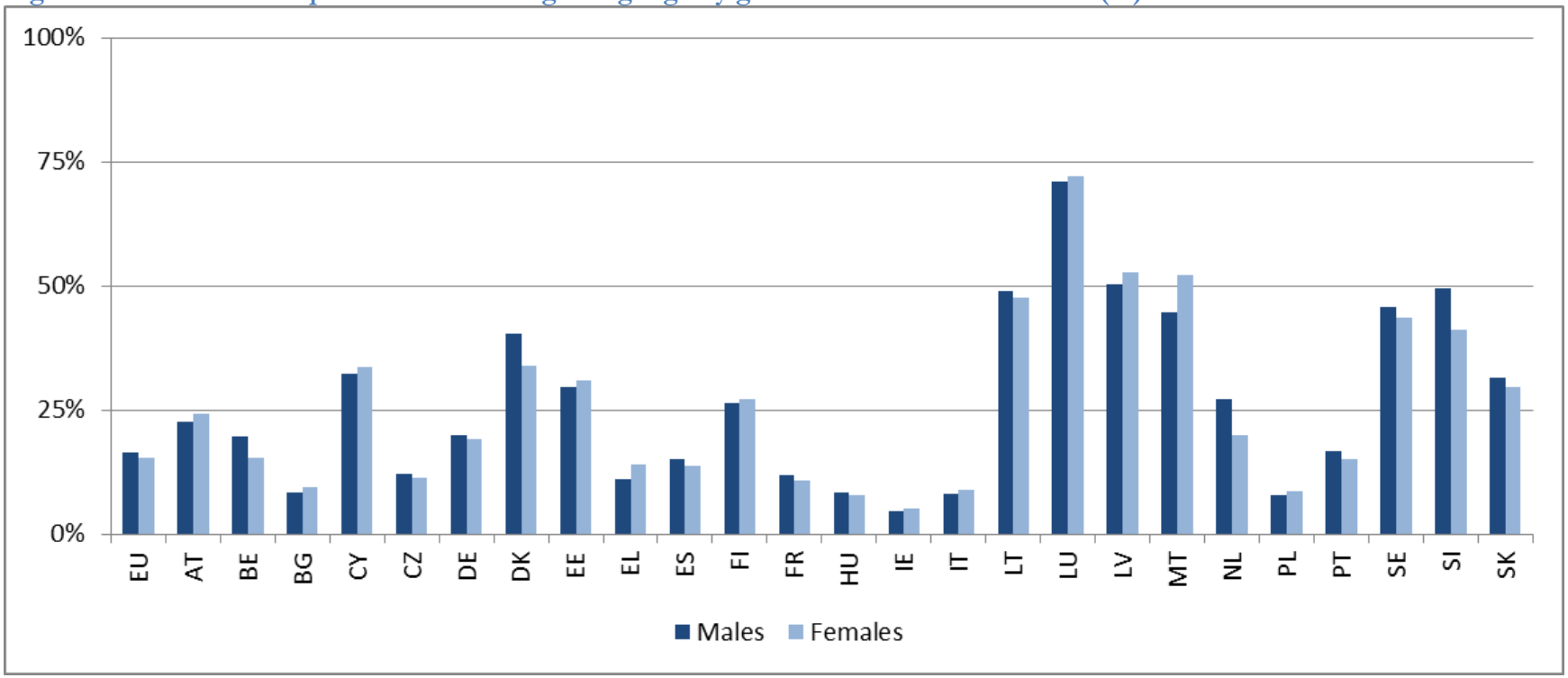
With respect to different age groups, once again Figure 10 and Table A 10 in the Annex show an advantage for young individuals over older ones. Twenty-two percent of individuals aged 25-34 know one foreign language proficiently in the EU, while only 10% of 55-64 year-olds do so. The largest differences between the younger and older groups are in SE (34 p.p.), FI (32 p.p.) and DK (28 p.p.). Given that this finding is consistent with that for language knowledge,

results indicate that overall the youngest generation knows more languages and registers a higher share of individuals that know them at the proficient level.

The gap in language skills in favour of the highly educated is also confirmed (see Figure 11 and Table A 10). In the EU, on average, 30% of tertiary graduates know at least one language proficiently, while this share among the low-educated drops to 7.5%. Gaps vary greatly among countries, with the largest differences in CY (57 p.p.), MT (54 p.p.) and LT (40 p.p.).

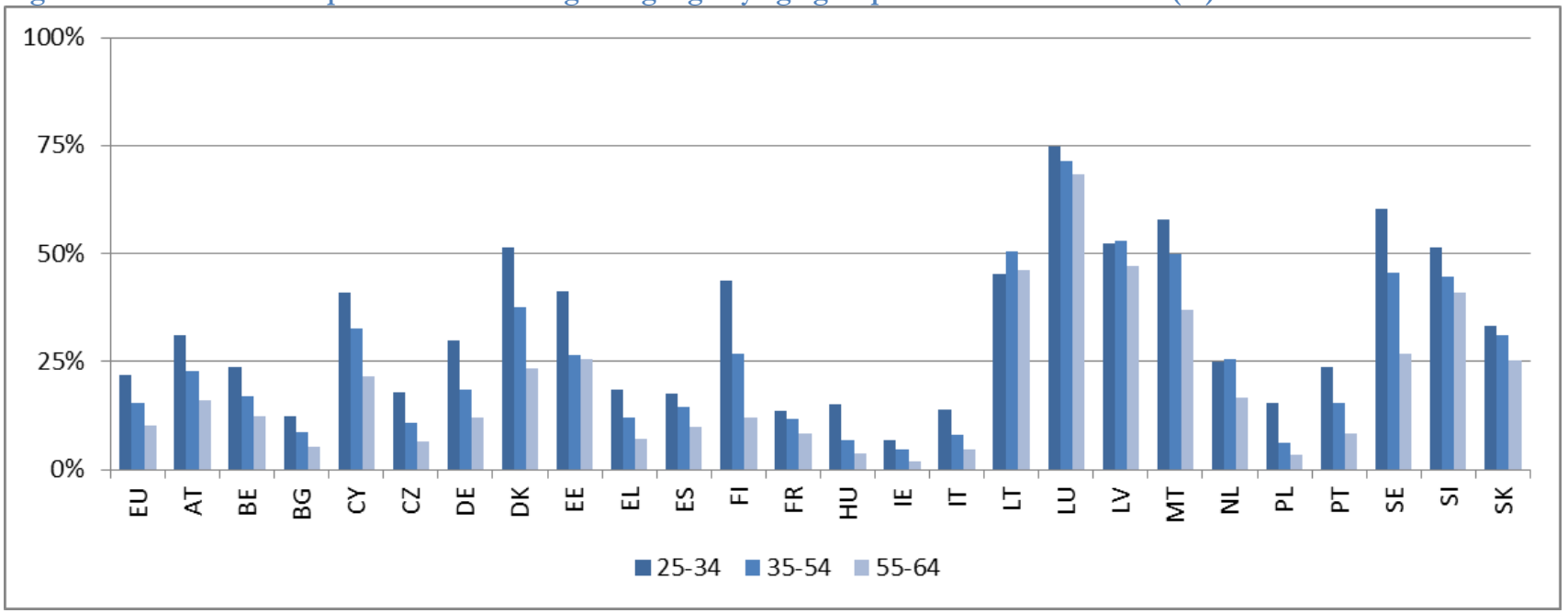
Additionally, as Figure 12 and Table A 10 in the Annex reveal, the share of individuals knowing a foreign language proficiently appears to be higher among employed than among unemployed and inactive persons. Eighteen percent of the employed persons in the EU Member States surveyed in the AES know a foreign language proficiently, while the share decreases to 13% among unemployed and 11% among inactive persons. Some countries, however, show different patterns. In DE, for example, barely any difference is noticeable between employed and inactive persons, while in DK, FR and IT the incidence of proficiency is higher among the unemployed than among those in employment.

Figure 9. Adults who are proficient in a foreign language by gender in EU Member States (%)



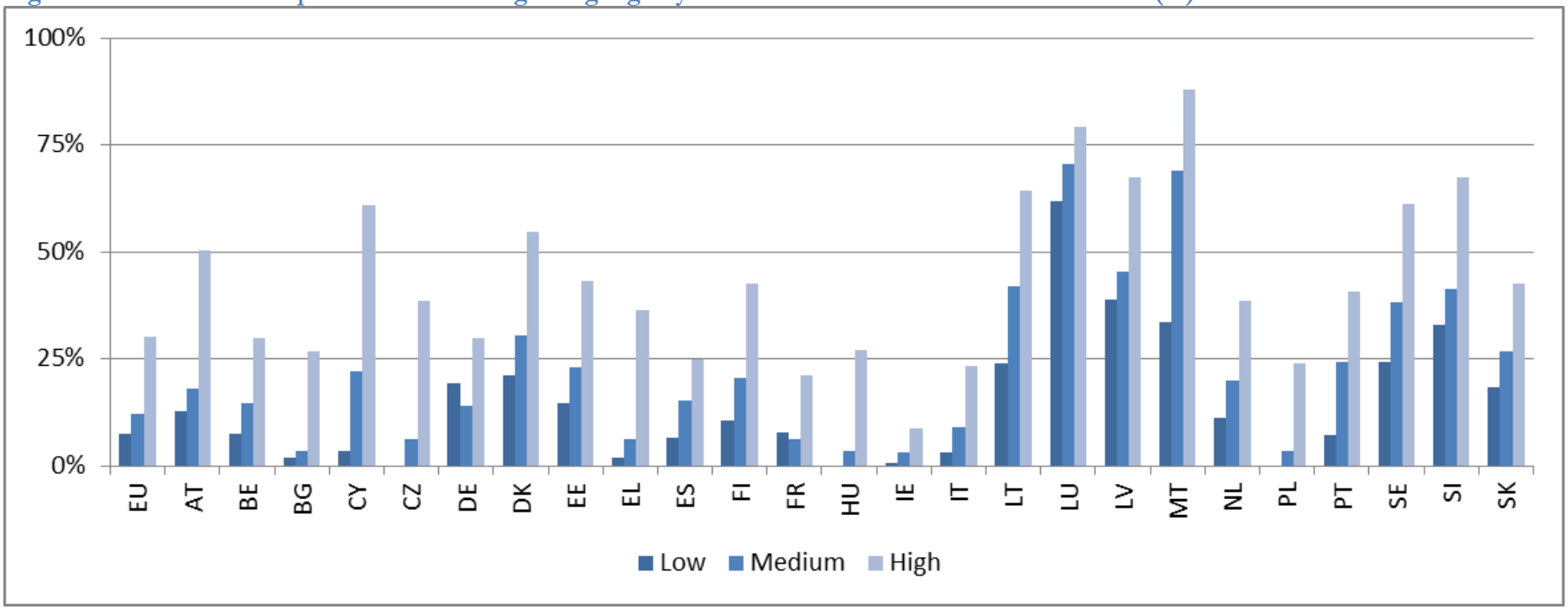
Source: CRELL calculations based on AES 2011 data. Notes: See Table A 10 in Annex for details on data availability and reliability. The graph shows only the highest reported language level – proficient. It excludes the categories fair and good.

Figure 10. Adults who are proficient in a foreign language by age group in EU Member States (%)



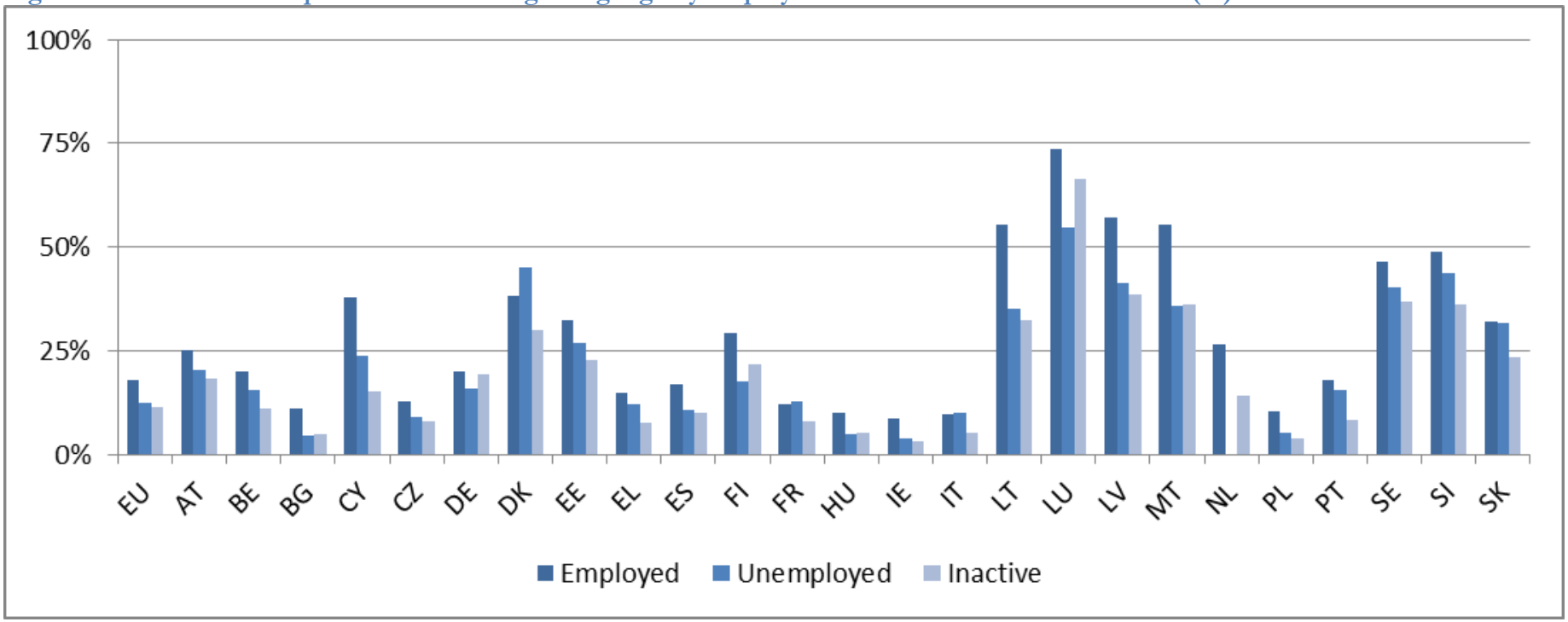
Source: CRELL calculations based on AES 2011 data. Notes: See Table A 10 in Annex for details on data availability and reliability. The graph shows only the highest reported language level – proficient. It excludes the categories fair and good.

Figure 11. Adults who are proficient in a foreign language by level of education in EU Member States (%)



Source: CRELL calculations based on AES 2011 data. Notes: See Table A 10 in Annex for details on data availability and reliability. The graph shows only the highest reported language level – proficient. It excludes the categories fair and good.

Figure 12. Adults who are proficient in a foreign language by employment status in EU Member States (%)



Source: CRELL calculations based on AES 2011 data. Notes: See Table A 11 in Annex for details on data availability and reliability. The graph shows only the highest reported language level – proficient. It excludes the categories fair and good.

Relationship between the number of languages known and proficiency levels in the two best known foreign languages

In order to test whether adults that report knowing more foreign languages also tend to report higher proficiency levels, we calculated correlation coefficients. These are presented in Table 5. In most EU Member States the correlation coefficients between the number of foreign languages known and the highest proficiency level in one of the two best known foreign languages are 0.30 or higher. The relationship is weaker in CY, NL and SI and stronger in FI, the CZ and MT where the correlation coefficients are 0.43 or higher. FI is the country where the relationship between the number of foreign languages known and the proficiency level of the two best known foreign languages is the strongest.

Table 5. The relation between self-reported number of foreign languages known and proficiency level in one of the two best known languages[31]

COUNTRY	Correlation
	Number of foreign languages and proficiency level
AT	0.343**
BE	0.307**
BG	:
CY	0.200**
CZ	0.446**
DE	0.394**
DK	0.378**
EE	0.361**
EL	0.383**
ES	:
FI	0.532**
FR	0.337**
HU	:
IE	0.300*
IT	0.335**
LT	0.337**
LU	0.332**
LV	0.296**
MT	0.426**
NL	0.274**
PL	0.372**
PT	0.376**
SE	0.360**
SI	0.088**
SK	0.357**

Source: CRELL calculations based on AES 2011 data. Notes: "()" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size.

[31] ** Correlation is significant at the 0.01 level.

PART V

The Relationship between Language Knowledge and Employment Status

This section answers the following questions: 1) What is the relationship between foreign language knowledge and individual employment status (employed vs. not employed)? 2) What is the association between employment status and the different dimensions of foreign language knowledge – number of languages known and proficiency level? And 3) Is knowledge of the most commonly known foreign languages more strongly associated to better labour market opportunities?

In order to answer these questions, CRELL analyses rely on logistic regressions using AES 2011 data for the available EU Member States. As previously mentioned, there are no data for UK because no information on foreign languages was collected and RO was excluded because of the very high non-response rate in the AES language module. In addition, IE has been excluded because of the very high share of missing information on employment status (54%), which would make the analysis highly unreliable. Thus, whereas in the previous section we presented figures for 25 Member States, in this part we present analyses for 24 Member States due to the exclusion of an additional country – Ireland.

As in the previous section, the sample is limited to individuals aged 25-64. Additionally, within this 25-64 age group, sample exclusion criteria for this part of the analysis included individuals who stated being in education (those who define their main current labour status as "pupil, student, further training, unpaid work experience"), retired ("in retirement or early retirement or has given up business"), disabled ("permanently disabled"), doing military service ("in compulsory military service"), and those who did not answer the question on main current labour status). These criteria exclude from the analysis individuals that have (temporarily or definitively) no attachment to the labour market and have, by definition, no possibility of being employed. Accordingly, although this study investigates employment versus unemployment as an outcome measure, because we include some inactive persons in the unemployed category we are comparing the employed to the not employed.

Following, among others, Ginsburgh and Prieto-Rodriguez (2011) and Saiz and Zoido (2005), we further restrict the sample to the native-born population[32]. Our final working sample size is composed of 120,597 observations.

As discussed, an extensive strand of literature exists on the returns to foreign language skills for immigrants in different host countries and numerous studies have investigated how mastering the language known in the country (especially English, for the US and UK) contributes to assimilation in the labour market. Very little research exists, on the other hand, on the returns to speaking foreign languages for the native population. This is due to lack of data, but also to the problems in disentangling the real effect of foreign language knowledge on labour market outcomes, since a number of potential confounding factors can intervene.

Firstly, there is an issue of self-selection. That is, there are a number of unobservable characteristics that can simultaneously affect labour market performance and knowledge of foreign languages, implying that foreign language skills are not randomly assigned in the population. Saiz and Zoido (2005)[33] present an overview of the different types of selection that should be considered:

- Self-selection based on expected returns to language skills: assuming that the cost of learning a language is the same for everybody, individuals with higher expected returns to speaking a foreign language will have more incentives to invest in it. The empirical evidence is thus likely to show a labour market advantage for individuals with better foreign language knowledge that is higher than the "real" one (i.e. the average one that would be found in case of randomly assigned language knowledge), therefore producing an upward bias in the estimation[34].
- Self-selection based on cognitive competence: it is likely that the cost of learning a foreign language is not the same for all individuals and perhaps lower for those with higher levels of

[32] The main objective of this report is to analyse the extent to which, other things being equal, a better knowledge of foreign languages can be associated to better labour market outcomes. The type of language knowledge that is relevant for natives and foreign-born on the labour market, however, is probably not the same, since the main language skill required for immigrants is likely to be not of foreign languages, but of the main language of the country. A lot of attention has been devoted in the economic literature to the relationship between fluency in the language of the host country and labour market performance; in this framework, however, language knowledge is part of the wider concept of assimilation of migrants in the host country, a socio-economic phenomenon that goes well beyond language knowledge. Therefore, investigating the differential association between language skills and labour market outcomes for natives and for migrants requires applying different conceptual frameworks and models, and cannot be studied jointly. Only 8.32% of the overall EU sample is composed of foreign-born individuals (with shares varying from 0.3% in Poland to 26.8% in CY). This reduced sample size for the foreign born does not allow us to carry out a separate analysis for the migrant population that can provide reliable results.

[33] While the study focuses on earnings, a similar reasoning might be applied to different types of labour market outcomes, including the chances of employment.

[34] This is similar to the problem of self-selection into college attendance; see Willis and Rosen (1979).

cognitive competence. As a result, individuals with better ability will be more likely to know foreign languages, once again producing an upward bias in the estimates, since the variable on language knowledge will partly capture the effect of ability.

- Self-selection based on preferences for different fields of study and jobs: in some fields of study, it is more likely to be learning foreign languages, and the field of study can subsequently lead to higher probabilities of having certain types of jobs. Depending on the demand for these jobs and their characteristics (types of contract, career patterns, average earnings), this selection problem can lead to biased estimates as well, although it is harder to determine in which direction.

Several studies have attempted to control for observed heterogeneity and therefore possible ability biases in different ways, e.g. using methods such as propensity score matching or instrumental variables. Unfortunately, AES data do not allow the application of these methods to address endogeneity issues. That being the case, the analyses presented in this study are aimed at investigating the association between employment status and knowledge of foreign languages – taking into account a number of observable characteristics that are likely to affect labour market outcomes – but they do not allow drawing conclusions concerning a real causal impact of language skills on the chances of employment.

Another caveat that needs to be taken into account is that the AES relies on self-assessed language knowledge, which is of course subject to measurement error. As discussed by Dustmann and van Soest (2001) and Dustmann and van Soest (2002), self-reported variables on language proficiency are likely to suffer from two types of misclassification errors, i.e. errors that are purely random and independent over time and errors that are time-persistent, because certain individuals have a tendency to over- or under-report. Without a panel dimension that would allow for a longitudinal analysis, it is impossible to disentangle these separate components.

With these caveats in mind, the results of our regression analyses are presented in the next sections.

In order to capture the relationship between language knowledge with employment status, we use a logistic regression, in which the dependent variable is a binary variable equal to 1 if the individual is employed and 0 otherwise (i.e. either unemployed or inactive, excluding those in education, retired, disabled, in military service or those fulfilling domestic tasks). The analyses presented in this part of the report takes into account the part of the inactive individuals that can still have some level of attachment to the labour market and those that could potentially change

activity status to become active relatively quickly. It does not include other types of inactive persons, such as individuals in education, retired persons, etc, which were included in part IV of this report.

We include in our estimates the standard control variables used in the literature, namely age (included as dummy variables for age groups 25-34, 35-54, 55-64), gender (dummy for female), educational level (included as dummy variables for medium and high education, with low education being the reference category[35]), marital/cohabitation status (dummy variable for being married – including registered partnership – or living in a consensual union), and its interaction with a dummy variable for females. We also include parental education as a proxy for socio-economic status, in the form of a dummy variable capturing the medium or higher level of education of either of the parents (dummy variable for medium and high).

Starting from this base model, we add different variables related to language knowledge to investigate its association with individual employment status. First, we analyse the relation of the number of foreign languages and the proficiency level in at least one foreign language known with employment status. Next, we measure the relation between knowledge of the most known languages in Europe – English, French, German, Spanish and Russian[36] – and English proficiency with the employment status of the adults. In both cases we present the results for the EU as a whole (pooled) and for each individual Member State.

The Association of Foreign Language Knowledge with Employment Status – Number of Languages and Proficiency

In this first part of the analysis, our variables of interest are the number of foreign languages known (hereafter FL), and the level of proficiency[37]. In the model below we consider the number of foreign languages known by using dummy variables for knowledge of one language and for knowledge of two or more languages, and we take into account the level of knowledge, including a dummy variable capturing whether the individual declared being

[35] As explained in Part III, low education includes ISCED 1997 levels 0-2, i.e. primary or lower secondary education); medium education includes ISCED 1997 levels 3-4, i.e. upper secondary and post-secondary non-tertiary education; and high education covers ISCED 1997 levels 5 or higher, i.e. tertiary education.

[36] As already mentioned, these are the five most taught languages according to Eurostat, and those that are given priority in the AES when enquiring about foreign language knowledge; as a consequence, these are the languages for which sample sizes are more likely to be enough for providing reliable results. While it would be interesting to investigate the association between employment rates and knowledge of other languages (especially non-European ones, e.g. Chinese, Japanese or Arabic), very small sample sizes prevent us from taking them into account in our analysis.

[37] Construction of these indicators draws on the literature in the field (see Ginsburgh & Prieto-Rodriguez, 2011), and adapts it to the information available in the AES. The literature has also resorted to information on languages used at the workplace for similar analyses, but this information is not available in the AES.

proficient in one of the two best-known foreign languages known[38]. The reference categories in the regressions are individuals aged 25-34, males, not married or cohabitating, with low education, no info or low parental education, and reporting no knowledge of foreign languages, not being proficient in any foreign language.

Table 6 presents the descriptive statistics of the variables included in the regression for the EU pooled sample. The table shows that at the EU level about 80% of 25-64 year-olds are employed, 31.1% of adults report knowing one foreign language while 29.7% report knowing two or more foreign languages. The percentage of adults that state that they are proficient in at least one foreign language is 13.7%. Regarding the control variables, Table 6 also shows that 50.1% of the adults participating in the AES are female, 58% are between 35 and 54 years old and 16.8% are older than 54 years. About 48% of adults attained a medium level of education and 28.8% have the highest educational level. The percentage of adults whose parents have a medium or high educational level is 43.1. Finally, 73.8% of the analysed age group across Europe are married while 37.4% of the analysed population are married or cohabiting women.

Table 6. Descriptive statistics of the variables included in the model - EU

	%
Employed	79.8
Knowing one FL	36.1
Knowing two or more FL	29.7
Proficient in at least one FL	13.7
Female	50.1
Aged 35-54	58.0
Aged 55-64	16.8
Medium education	47.8
High education	28.8
Medium-high parental educ.	43.1
Married/cohabitating	73.8
Married/cohabitating (female)	37.4
Number of observations	120,597

Source: CRELL calculations based on the AES 2011 working sample. All figures are weighted. FL is the acronym for foreign language.

[38] As explained in the part on descriptive statistics, instead of considering only the first foreign language known, we consider both foreign languages reported as best-known and for which the level of knowledge is collected.

Table 7 presents the beta coefficients and standard errors of the logistic regression for the EU Member States' pooled sample. Country dummy variables are used for the EU-average regression to control for country wise heterogeneity. The table shows that for the EU as a whole – the 24 EU Member States included here – the employment status is positively affected by the number of languages known as well as by being proficient in at least one foreign language. Specifically, the variable that measures whether adults speak one foreign language has a positive and statistically significant coefficient, meaning that adults knowing one foreign language are more likely to be employed than the ones who do not know any foreign language in Europe. The same is true for the relationship between the knowledge of two or more foreign languages and the employment status and also for the variable "being proficient in at least one FL"; a positive and significant relationship is found, indicating that those adults that are proficient in at least one foreign language are more likely to be employed. Table 7 also shows which socio-economic characteristics are associated with employment status. In general, women have lower employment rates than men. Individuals aged 35-54 years old are more likely to be employed than those aged 25-34, while the employment rate of older individuals (aged 55-64) is lower than that of the youngest group. Higher educational attainment appears to guarantee a higher employment rate, which rises with the level of education. Men who are married or cohabitating are more likely to be employed than those who are not, while the opposite is true for women; this result is coherent with the literature on female participation in the labour market. The results also show that, in terms of the variables measuring language knowledge, being proficient in at least one foreign language has the weakest association with employment status. Additionally, there is a strong association between all of the socio-demographic variables, except for medium-high parental education levels, and the employment chances of individuals.

Table 7. Language knowledge and employment status – Number of languages and proficiency – EU

Employment	
Knowing one FL	**0.240*****
	(0.030)
Knowing two or more FL	**0.252*****
	(0.038)
Proficient in at least one FL	**0.091***
	(0.045)
Female	**-0.304*****
	(0.044)
Aged 35-54	**0.423*****
	(0.031)
Aged 55-64	**-0.142*****
	(0.039)
Medium education	**0.858*****
	(0.032)
High education	**1.582*****
	(0.041)
Medium-high parental educ.	0.053
	(0.031)
Married/cohabitating	**0.975*****
	(0.042)
Married/cohabitating (female)	**-1.265*****
	(0.054)
Constant	**0.741*****
	(0.076)
Observations	120597

Source: CRELL calculations based on AES 2011. The reference categories are: male, age group 25-34, low education level, not married/cohabitating, no info or low parental education, no knowledge of foreign languages (FL). All figures are weighted.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

The results of measuring the relation of the number of languages and proficiency with employment at the country level are shown in Table 8. Additionally, Figure 13 presents an overview of the countries with a positive association between the number of languages and/or proficiency with employment chances and Figure 14 shows a summary of the results by country.

Table 8. Language knowledge on employment status – Number of languages and proficiency in EU Member States

	AT	BE	BG	CY	CZ	DE
Employment						
Knowing one FL	-0.057	0.018	0.108	**0.438***	**0.245***	0.205
	(0.160)	(0.171)	(0.098)	(0.202)	(0.106)	(0.115)
Knowing two or more FL	-0.088	**0.445****	0.111	-0.082	0.208	0.238
	(0.205)	(0.148)	(0.145)	(0.267)	(0.124)	(0.129)
Proficient in at least one FL	0.353	0.055	0.148	**0.889*****	-0.001	0.054
	(0.201)	(0.203)	(0.182)	(0.205)	(0.153)	(0.161)
Observations	3249	3976	4555	1652	6227	4797

	DK	EE	EL	ES	FI	FR
Employment						
Knowing one FL	0.604	**0.606****	**0.305****	**0.232*****	0.446	**0.209***
	(0.366)	(0.229)	(0.111)	(0.058)	(0.255)	(0.090)
Knowing two or more FL	**0.747***	**0.887*****	0.314	**0.211***	**0.560***	0.064
	(0.358)	(0.213)	(0.205)	(0.085)	(0.219)	(0.109)
Proficient in at least one FL	-0.362	-0.191	0.148	**0.177***	**0.378***	-0.192
	(0.188)	(0.160)	(0.187)	(0.087)	(0.175)	(0.148)
Observations	2806	2533	4407	12509	2898	9102

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table 8. Language knowledge on employment status – Number of languages and proficiency in EU Member States – Cont.

	HU	IT	LT	LU[39]	LV	MT
Employment						
Knowing one FL	0.107	**0.361*****	0.219		0.032	**0.497***
	(0.120)	(0.085)	(0.317)		(0.234)	(0.215)
Knowing two or more FL	0.318	**0.299****	0.587		0.347	**0.690*****
	(0.221)	(0.107)	(0.321)		(0.241)	(0.208)
Proficient in at least one FL	-0.230	0.120	**0.478*****	0.262	**0.312****	**0.405****
	(0.233)	(0.167)	(0.100)	(0.182)	(0.099)	(0.135)
Observations	5164	6915	3378	2118	3894	2449

	NL	PL	PT	SE	SI	SK
Employment						
Knowing one FL	**0.489***	**0.215*****	**0.352*****	0.257	0.258	-0.044
	(0.203)	(0.051)	(0.075)	(0.267)	(0.252)	(0.176)
Knowing two or more FL	**0.593****	**0.199****	**0.356*****	0.252	**0.449***	0.205
	(0.182)	(0.070)	(0.091)	(0.271)	(0.217)	(0.176)
Proficient in at least one FL	0.225	**0.236***	-0.157	0.218	0.096	-0.106
	(0.214)	(0.113)	(0.105)	(0.189)	(0.129)	(0.126)
Observations	2530	17683	9001	2284	2851	3619

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

[39] Controls for number of languages known were not included in the model for LU since most of the population knows many foreign languages, so the estimates would not converge because of small sample size in some groups.

Figure 13. Number of languages known and/or proficiency and employment status in EU Member States

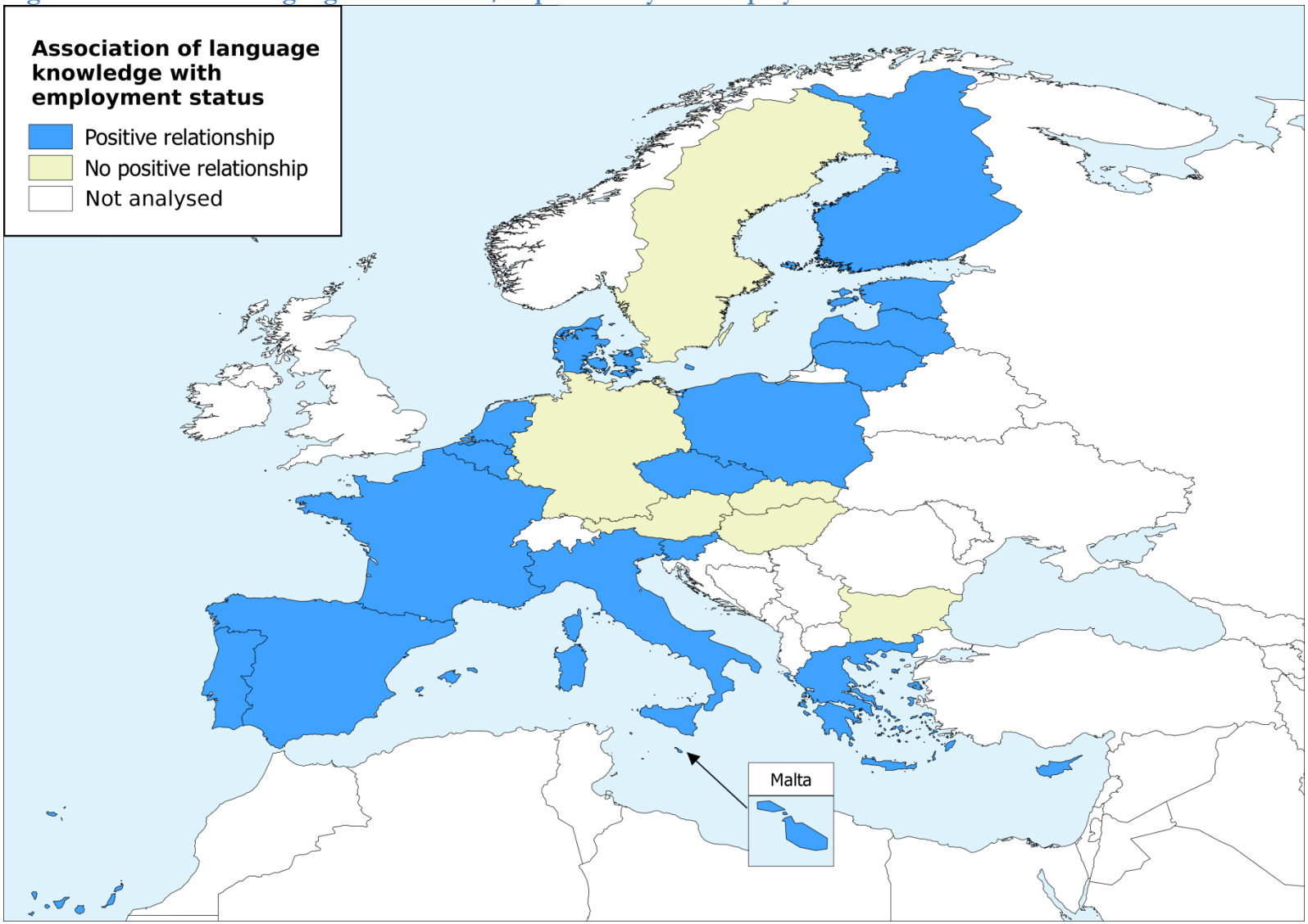
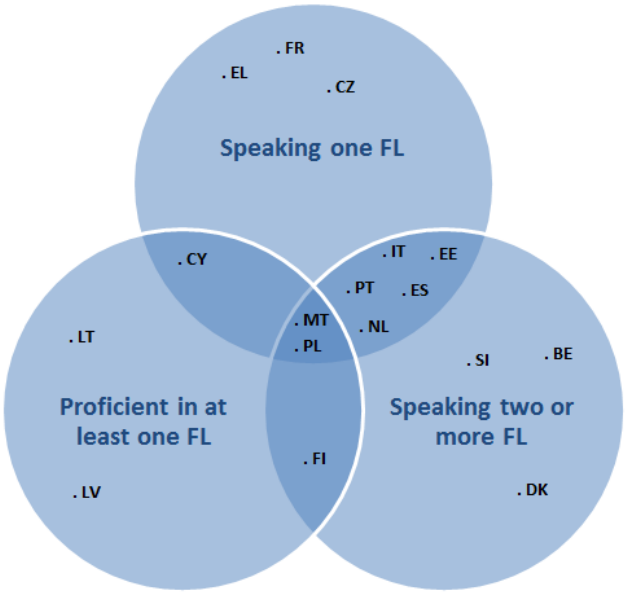


Figure 14. Positive associations of the number of languages known and language proficiency with employment status – significant results in EU Member States



At the country level, knowing one foreign language and/or knowing two or more languages have a positive association with employment status in 17 Member States. In 15 Member States adults knowing one foreign language or knowing two or more or both are more likely to be employed than the ones that do not know any foreign language. Proficiency in at least one foreign language shows significant effects in 6 Member States (i.e. CY, FI, LT, LV, MT and PL). In EE, ES, IT, MT, NL, PL and PT both knowing one foreign language and knowing two or more languages has a positive impact, while knowing only one is correlated with being employed in CY, CZ, EL and FR. In CY, CZ, EE, EL, ES, FR, IT, MT, NL, PL, and PT, knowing one language is positively correlated with employment, but the proficiency level has an impact only in three of these countries (CY, MT and PL). Additionally, knowing one foreign language, knowing two or more foreign languages and being proficient in at least one FL have a positive relation with employment status in 2 Member States: MT and PL.

In MT and PL, besides knowing either one or two or more foreign languages, the proficiency level also correlates with the employment status. Conversely, in LT and LV only proficiency correlates positively with employment.

Knowing any number of foreign languages does not impact the employment status in AT, BG, DE, HU, LU, SE and SK. And in BE, DK and SI only knowing two or more foreign

languages has a positive impact on employment while proficiency level alone affects employment in LT and LV.

Concerning the strength of the relationship between the number of languages known and language proficiency on employment chances the results reveal that the strongest associations are found in EL, ES, IT, PL and PT for knowing one foreign language. The same is true in EE, MT and PT for the adults that know two or more foreign languages. Finally, in CY and LT there is a strong association between proficiency in at least one foreign language and the employment chances of individuals.

The Association of Knowledge of Different Foreign Languages and English Proficiency with Employment Status

In the previous section, we found an overall positive relation of foreign language knowledge with employment status at the European level. It is, however, likely that the reward for language knowledge depends on the specific language known by the individual, and that this varies across countries. In this section, we therefore try to investigate the association of knowledge of specific foreign languages on employment status; we take into account the five most common foreign languages in the EU, namely English, French, German, Russian and Spanish. According to the AES questionnaire, these are the most taught languages (among languages spoken in two or more countries) in Europe, and therefore those that Eurostat suggests being prioritised in the identification of the best-known languages. These enter the regressions as dummy variables capturing knowledge of the language, at any level of proficiency.

In order to analyse the differential effect of proficient knowledge of the foreign language, rather than just of knowledge at any level, we include English proficiency among the regressors, in the form of a dummy variable equal to 1 for individuals who self-assess their knowledge of the language as proficient, and zero otherwise. It should be noted that, because of the way the questionnaires are designed, some caveats need to be considered in this respect. In 2011, the level of knowledge of the foreign language was asked only for the first two best known languages. Around 6% (unweighted) of those who report English among the known foreign languages, do not list it among the best-known. Over half of them report being either good or proficient in the first two best-known foreign languages, which does not exclude the possibility that they might also speak English at least at a good level.

We decided not to include controls for proficiency in the other four languages because this problem affects them more severely than English: 19% of those who report knowledge of

French do not list it among the two best-known languages (but with 63% of them reporting being either good or proficient in the first two languages); the percentages for German were respectively 18% and 49%, for Spanish 32% and 63%, for Russian 8% and 57%. Moreover, when carrying out the analyses at the country level, sample sizes of knowledge by proficiency level for these four languages are very small, which would make the results highly unreliable.

As a first step, the analysis of the association of knowledge of the five languages with employment status is carried out for the overall population. However, the role of language knowledge is likely to vary across generations; older people entered the labour market in different time periods and under different social and economic circumstances. For these reasons, we investigate two age groups separately (25-40 and 41-64[40]), in order to identify varying patterns between younger and older individuals.

The analysis is presented for the EU as a whole and also for each individual Member State. The estimates include the same control variables as in the previous section.

As Table A 12 in the Annex shows, for the total population at the EU level the percentage of adults knowing English is 53.5. As for French, 13.6% of 25-64 year-olds report knowing this foreign language. The percentage of adults knowing German is 12, for Spanish is 6.6 and for Russian is 8.3.

The results of the logistic regression analysis for the EU as a whole considering the total population and the age groups 25-40 and 41-64 are presented in Table 9. At the EU level, there is a significant positive relation between knowing English and Russian and the employment status for the entire population (25-64) surveyed and also for distinct age groups, 25-40 and 41-64. Being proficient in English positively impacts chances of employment, independently of knowledge of English only for the 25-40 age group. Knowing French has a negative impact on the likelihood of employment for the same age group, whereas knowing German has a positive impact on employment status for the 41-64 age group.

The results also show that there is a strong association between some of the variables measuring knowledge of specific foreign languages and employment status, namely English for the three age groups analysed and Russian for the total population and for the oldest age group.

[40] We opted for widening the age group of young people used in Part IV, namely 25-34, to cover those up to age 40. Table A 12 shows that there is a higher percentage of adults in the 25-40 age group that know English and this is confirmed by previous literature (i.e. Ginsburg & Weber, 2005). Also, this option ensured a higher number of observations for the younger adults. It should be pointed out that HU and MT applied special anonymisation criteria for the microdata, so that age is available only in aggregated age groups (25-29; 30-34; 35-39; 40-44; 45-49; 50-54; 55-59; 60-64); as a consequence, the two age groups adopted for these countries are 25-39 and 40-64.

Moreover, there is a strong association between all of the socio-demographic variables and the employment chances of individuals, except for medium-high parental education level.

Table 9. Knowledge of specific foreign languages and employment status – EU

	Total population	Age group 25-40	Age group 41-64
Employment			
Knowing English	**0.231*****	**0.155*****	**0.320*****
	(0.030)	(0.044)	(0.044)
Proficient in English	0.108	**0.151***	0.081
	(0.058)	(0.076)	(0.092)
Knowing French	-0.069	**-0.162***	-0.014
	(0.042)	(0.068)	(0.055)
Knowing German	0.074	0.070	**0.131***
	(0.041)	(0.059)	(0.056)
Knowing Spanish	0.082	0.036	0.152
	(0.061)	(0.087)	(0.086)
Knowing Russian	**0.267*****	**0.177****	**0.249*****
	(0.045)	(0.066)	(0.063)
Female	**-0.302*****	**-0.459*****	-0.098
	(0.044)	(0.061)	(0.064)
Aged 35-54	**0.426*****	**0.369*****	
	(0.032)	(0.039)	
Aged 55-64	**-0.136*****		**-0.588*****
	(0.040)		(0.034)
Medium education	**0.867*****	**0.921*****	**0.811*****
	(0.032)	(0.054)	(0.039)
High education	**1.578*****	**1.535*****	**1.655*****
	(0.041)	(0.064)	(0.058)
Medium-high parental educ.	0.049	**0.150****	-0.028
	(0.031)	(0.047)	(0.042)
Married/cohabitating	**0.976*****	**0.992*****	**1.070*****
	(0.042)	(0.062)	(0.060)
Married/cohabitating (female)	**-1.265*****	**-1.232*****	**-1.398*****
	(0.054)	(0.080)	(0.075)
Constant	**0.749*****	**1.144*****	**0.868*****
	(0.077)	(0.123)	(0.094)
Observations	120597	49381	71216

Source: CRELL calculations based on AES 2011. The reference categories are: male, age group 25-34, low education level, not married/cohabitating, no info or low parental education, no knowledge of foreign languages (FL). All figures are weighted.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

The association between knowledge of different foreign languages and of English proficiency with the likelihood of being employed at the country level is presented below. First we discuss the results for the entire population. Next, we present the results for the age group 25-40 and finally for the age group 41-64. Depending on the country, not all five foreign

languages were taken into account. We dropped official languages in some countries (e.g. French in France) and discarded those languages that are known (in the total population or in one of the two age sub-groups) by a number of individuals too small to allow results to be published, according to Eurostat guidelines for publication. This selection was based on the reduced working sample used for the regressions. In BE and LU we kept the official languages that presented a small share of adults who reported knowing them as mother tongues. Table A 12 in the Annex shows the share of people by country who reported knowing each of the five languages by age group, and the cases where sample size was below the minimum threshold for publication. The languages included in the final model specification by country are summarised in Table 10.

Table 10. Language dummy variables included in the model in EU Member States

COUNTRY	English	French	German	Spanish	Russian
AT	X	X		X	
BE	X		X	X	
BG	X	X	X		X
CY	X	X	X		
CZ	X	X	X	X	X
DE	X	X		X	X
DK	X	X	X	X	
EE	X		X		X
EL	X	X	X		
ES	X	X	X		
FI	X	X	X	X	X
FR	X		X	X	
HU	X	X	X		X
IT	X	X	X	X	
LT	X	X	X		X
LU	X	X	X	X	
LV	X	X	X		X
MT	X	X	X	X	
NL	X	X	X	X	
PL	X	X	X	X	X
PT	X	X	X	X	
SE	X	X	X	X	
SI	X	X	X	X	X
SK	X	X	X		X

Table 11 presents the results for the total population. The same results are presented in Figure 15 and Figure 16, which provide an overview of the countries in which there is a positive

relation of knowledge of one of the five languages considered and of English proficiency with the employment status of the individuals.

The results indicate that in 13 out of 24 Member States (CY, DE, EL, ES FI, IT, LT, LU, LV, MT, NL, PT and SI) knowing English is associated with a higher rates of employment. In 4 out of those 13 Member States (CY, ES, FI and MT) being proficient in English also increases the likelihood of being employed. In 5 Member States, namely BG, LT, LV, PL and SI, knowing Russian is positively associated with employment status, with an associated negative relation in SI and a positive one in the remaining countries. In DK knowing German is positively related with employment status. In MT knowing French has a positive association with employment status. Finally, in 7 out of 24 Member States – AT, BE, CZ, EE, FR, HU and SE – no significant associations between language knowledge and employment were found.

Concerning the strength of the relationship between knowledge of English and employment status, the strongest associations are found in IT, LV and PT. For knowledge of Russian the same is true in LV. In CY there is a strong association between proficiency in English and the employment chances of individuals.

Table 11. Knowledge of specific foreign languages and employment status in EU Member States – Total population (25-64)

	AT	BE	BG	CY	CZ	DE
Knowing English	-0.000	0.191	0.148	**0.410***	0.015	**0.292****
	(0.152)	(0.147)	(0.120)	(0.193)	(0.100)	(0.105)
Proficient in English	0.326	0.128	0.144	**0.769*****	0.178	0.180
	(0.212)	(0.237)	(0.246)	(0.204)	(0.183)	(0.184)
Knowing French	-0.164		0.054	-0.230	-0.256	-0.187
	(0.195)		(0.244)	(0.290)	(0.254)	(0.131)
Knowing German		0.261	-0.245	0.892	0.013	
		(0.185)	(0.184)	(0.561)	(0.091)	
Knowing Spanish	0.075	-0.359			-0.028	0.063
	(0.353)	(0.262)			(0.339)	(0.202)
Knowing Russian			**0.282***		0.186	0.211
			(0.116)		(0.109)	(0.155)
Observations	3249	3976	4555	1652	6227	4797

	DK	EE	EL	ES	FI	FR
Knowing English	0.468	0.253	**0.255***	**0.129***	**0.472***	0.154
	(0.311)	(0.157)	(0.111)	(0.063)	(0.203)	(0.085)
Proficient in English	-0.304	0.236	0.203	**0.474****	**0.488***	-0.319
	(0.196)	(0.235)	(0.204)	(0.148)	(0.191)	(0.188)
Knowing French	-0.279		0.086	0.023	-0.150	
	(0.280)		(0.230)	(0.076)	(0.202)	
Knowing German	**0.381***	0.235	-0.249	-0.190	0.172	0.038
	(0.173)	(0.185)	(0.219)	(0.168)	(0.149)	(0.144)
Knowing Spanish	0.211				-0.283	-0.059
	(0.408)				(0.206)	(0.114)
Knowing Russian		0.245			-0.130	
		(0.141)			(0.210)	
Observations	2806	2533	4407	12509	2898	9102

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table 11. Knowledge of specific foreign languages and employment status in EU Member States – Total population (25-64) – Cont.

	HU	IT	LT	LU	LV	MT
Knowing English	0.146	**0.340*****	**0.458*****	**0.675****	**0.253***	**0.400***
	(0.144)	(0.082)	(0.121)	(0.260)	(0.114)	(0.174)
Proficient in English	0.233	-0.019	0.371	0.194	-0.066	**0.345***
	(0.296)	(0.203)	(0.259)	(0.315)	(0.193)	(0.135)
Knowing French	-0.222	-0.060	0.014	0.017	-0.422	**0.479***
	(0.581)	(0.083)	(0.273)	(0.232)	(0.466)	(0.191)
Knowing German	0.165	0.037	0.153	0.082	0.167	-0.000
	(0.140)	(0.156)	(0.149)	(0.206)	(0.127)	(0.342)
Knowing Spanish		0.133		0.398		0.377
		(0.193)		(0.253)		(0.477)
Knowing Russian	0.177		**0.289***		**0.423*****	
	(0.375)		(0.136)		(0.097)	
Observations	5164	6915	3378	2118	3894	2449

	NL	PL	PT	SE	SI	SK
Knowing English	**0.500****	0.104	**0.380*****	0.379	**0.303***	0.223
	(0.185)	(0.061)	(0.079)	(0.251)	(0.153)	(0.133)
Proficient in English	0.437	0.238	-0.058	0.129	-0.016	-0.308
	(0.248)	(0.151)	(0.140)	(0.199)	(0.171)	(0.251)
Knowing French	-0.179	-0.084	0.130	0.298	-0.458	0.028
	(0.224)	(0.169)	(0.074)	(0.273)	(0.257)	(0.349)
Knowing German	0.166	0.097	-0.342	0.072	-0.042	0.127
	(0.167)	(0.063)	(0.175)	(0.179)	(0.125)	(0.120)
Knowing Spanish	-0.213	0.303	-0.038	0.112	-0.451	
	(0.383)	(0.253)	(0.085)	(0.271)	(0.267)	
Knowing Russian		**0.159****			**-0.556***	0.185
		(0.050)			(0.258)	(0.133)
Observations	2530	17683	9001	2284	2851	3619

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital/partnership status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Figure 15. Languages and/or proficiency and employment status in EU Member States

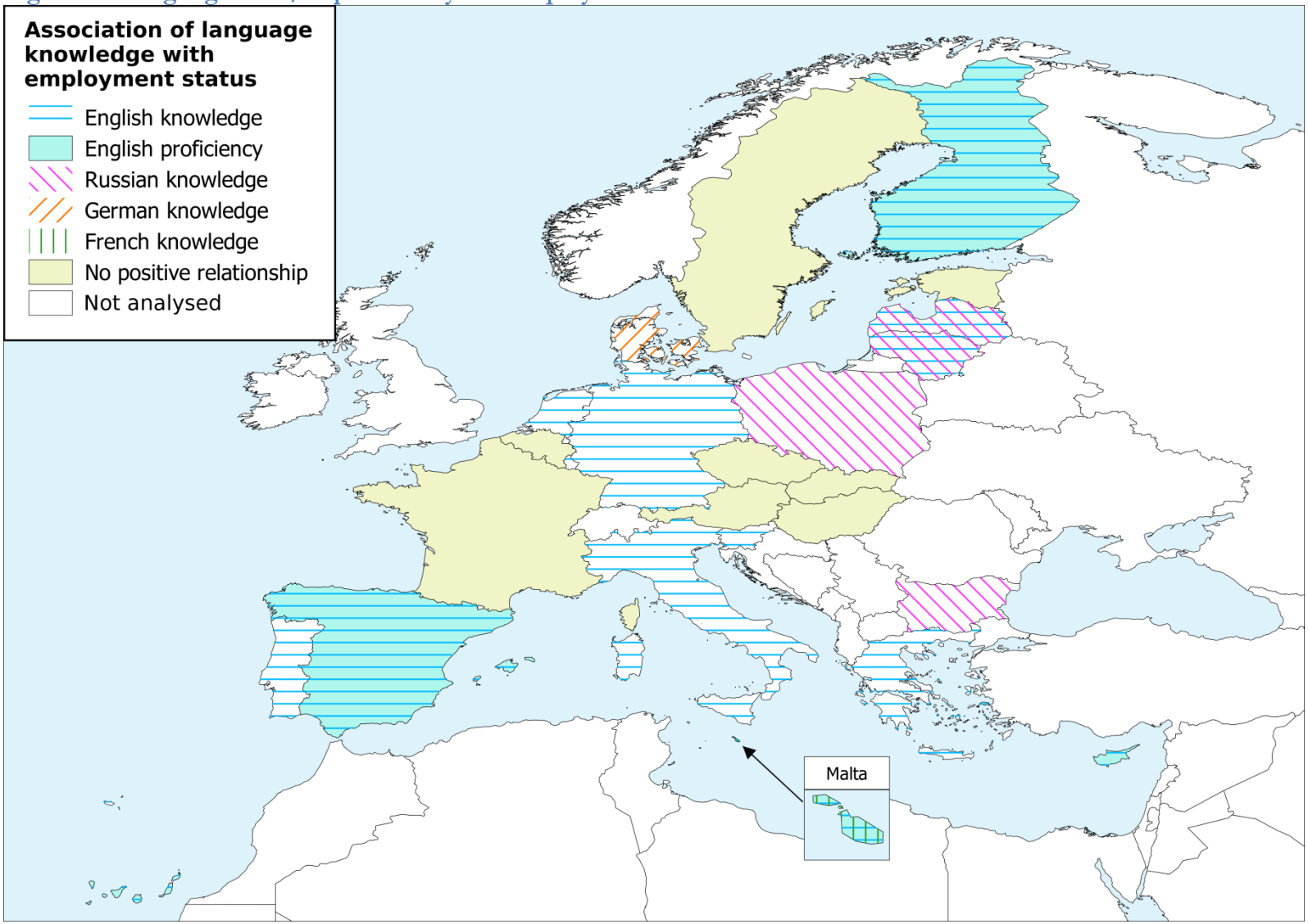
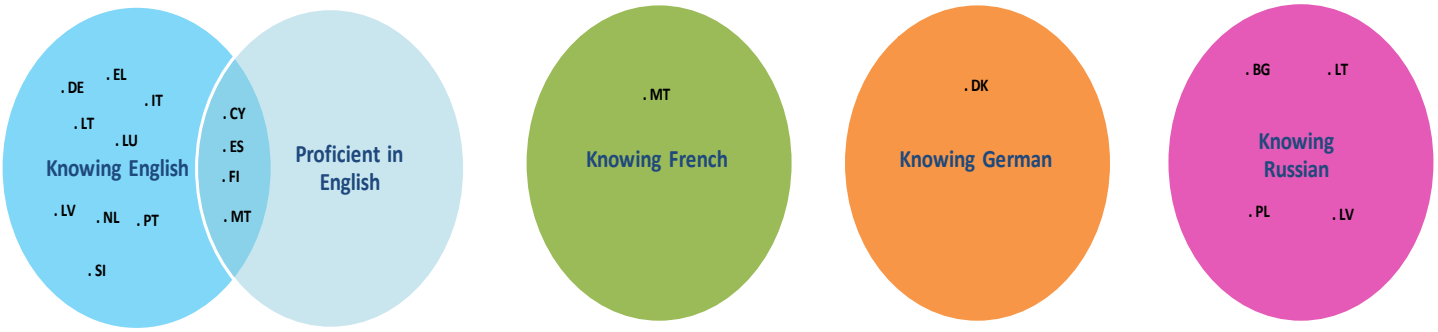


Figure 16. Positive relations between knowledge of the different languages and proficiency in English on employment status – significant results in EU Member States



The estimates for the age group 25-40 are presented in Table 12, and displayed graphically in Figure 17. The results obtained for the youngest age group show that in 10 out of 24 Member States (EL, ES, FI, LT, LV, MT, NL, PL, PT and SE) there is a significant positive effect of knowing a foreign language or of knowing it proficiently. In EL, ES, FI, NL and PL being proficient in English is associated with a higher employment rate, whereas knowing English at a lower level has no association with employment status. In MT knowing French continues to be positively related to employment status; knowing Russian increases the likelihood of employment only in LV. In LT, PT and SE knowing English (at any level) is associated with a higher rate of employment. In PL knowing German has a positive association with employment status.

In the age group 25-40 there is a strong association between knowledge of English and employment status in PT.

Table 12. Knowledge of specific foreign languages and employment status in EU Member States – Age group 25-40

	AT	BE	BG	CY	CZ	DE
Knowing English	0.253	0.159	0.235	0.221	-0.024	-0.006
	(0.291)	(0.254)	(0.149)	(0.443)	(0.124)	(0.198)
Proficient in English	0.218	0.268	0.102	0.473	0.241	-0.152
	(0.317)	(0.366)	(0.283)	(0.310)	(0.203)	(0.279)
Knowing French	-0.217		-0.009	-0.071	-0.268	0.093
	(0.328)		(0.357)	(0.472)	(0.288)	(0.217)
Knowing German		0.244	-0.168	0.735	-0.092	
		(0.323)	(0.259)	(0.765)	(0.113)	
Knowing Spanish	0.506	-0.556			-0.208	0.039
	(0.563)	(0.429)			(0.371)	(0.340)
Knowing Russian			0.317		0.031	0.465
			(0.199)		(0.158)	(0.336)
Observations	1262	1411	1892	661	2860	1550

	DK	EE	EL	ES	FI	FR
Knowing English	0.671	0.089	0.076	0.102	-0.099	0.220
	(0.488)	(0.243)	(0.163)	(0.088)	(0.588)	(0.135)
Proficient in English	-0.467	0.201	**0.529***	**0.473***	**0.738****	-0.131
	(0.268)	(0.255)	(0.242)	(0.185)	(0.251)	(0.267)
Knowing French	-0.368		-0.067	-0.177	-0.269	
	(0.397)		(0.287)	(0.133)	(0.285)	
Knowing German	0.187	0.022	-0.237	-0.368	0.128	0.204
	(0.241)	(0.230)	(0.280)	(0.249)	(0.218)	(0.238)
Knowing Spanish	0.109				-0.359	-0.001
	(0.446)				(0.274)	(0.157)
Knowing Russian		0.340			0.022	
		(0.180)			(0.327)	
Observations	1364	1238	1637	4963	1025	3751

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

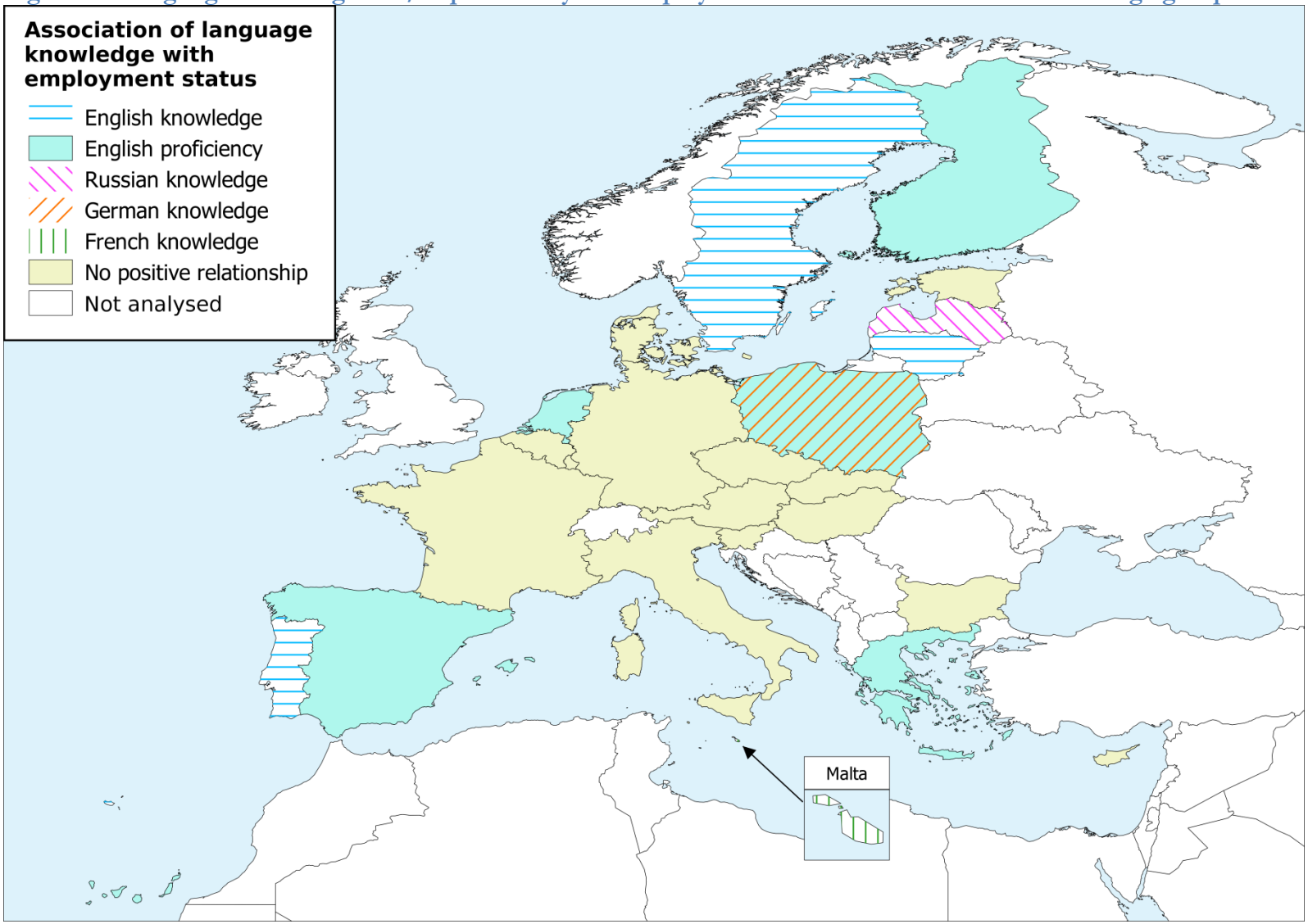
Table 12. Knowledge of specific foreign languages and employment status in EU Member States – Age group 25-40 – Cont.

	HU	IT	LT	LU	LV	MT
Knowing English	0.169	0.251	**0.345***	0.122	0.264	0.487
	(0.176)	(0.131)	(0.172)	(0.688)	(0.167)	(0.297)
Proficient in English	0.494	0.102	0.373	0.124	-0.164	0.295
	(0.328)	(0.256)	(0.288)	(0.579)	(0.217)	(0.225)
Knowing French	-0.070	-0.241	-0.452	-0.077	-0.560	**0.613***
	(0.652)	(0.128)	(0.363)	(0.453)	(0.547)	(0.287)
Knowing German	0.225	0.002	-0.048	0.213	0.175	-0.477
	(0.185)	(0.224)	(0.222)	(0.435)	(0.178)	(0.438)
Knowing Spanish		0.094		0.595		-0.333
		(0.245)		(0.477)		(0.605)
Knowing Russian	-0.522		0.273		**0.345***	
	(0.590)		(0.176)		(0.138)	
Observations	2212	2522	1267	884	1962	973

	NL	PL	PT	SE	SI	SK
Knowing English	0.558	0.056	**0.369****	**0.988***	-0.174	0.106
	(0.370)	(0.077)	(0.121)	(0.417)	(0.315)	(0.160)
Proficient in English	**1.164***	**0.324***	-0.036	0.244	-0.029	-0.317
	(0.501)	(0.162)	(0.177)	(0.309)	(0.233)	(0.279)
Knowing French	-0.567	-0.027	0.053	-0.059	-0.629	0.190
	(0.485)	(0.206)	(0.122)	(0.456)	(0.398)	(0.414)
Knowing German	0.163	**0.177***	-0.484	-0.055	-0.133	-0.059
	(0.337)	(0.082)	(0.252)	(0.295)	(0.201)	(0.149)
Knowing Spanish	-1.060	0.327	-0.097	0.478	-0.324	
	(0.596)	(0.296)	(0.128)	(0.483)	(0.333)	
Knowing Russian		0.039			-0.371	-0.043
		(0.080)			(0.514)	(0.186)
Observations	733	7924	3092	949	1367	1882

Source: CRELL calculations based on AES 2011. The age group for HU and MT is 25-39. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Figure 17. Language knowledge and/or proficiency and employment status in EU Member States – Age group 25-40



Regarding the results of knowing English, French, German, Spanish and Russian and English proficiency for the age group 41-64, Table 13 shows that in 16 out of 24 Member States (CY, CZ, DE, DK, EL, ES, FI, IT, LT, LU, LV, MT, NL, PL, PT, SK) there is a significant positive association between knowing a foreign language and/or in knowing English proficiently and employment chances. This is also presented in Figure 18. In 13 Member States knowing English is associated with higher levels of employment. In ES, CY and DE being proficient in English continues to be associated with higher employment rates. On the other hand, in CY both knowing English and being proficient in this language is associated with a higher likelihood of employment. In CZ and DK knowing German as a foreign language has a positive relation with being employed. The same is true for knowing Russian in LV and PL. In DE there is a positive relation between knowing and being proficient in English with employment, while a negative association of knowing French is found. Unexpectedly, the results also show a negative relation of knowing English in FR and a negative association of knowing Russian in SI with employment. In what concerns the strength of the relationship of English knowledge and employment status, the strongest associations are found in IT and PT. The positive association between knowing Russian and employment found in LV is strong and the same is true in CY for the relationship between proficiency in English and employment status.

The results of the models previously presented are displayed by country in the Annex, from Table A 13 to Table A 36. Very different patterns emerge within different countries.

The positive association between English knowledge and employment is quite consistent across age groups for ES, LT and PT. The same holds for Russian knowledge in LV. For these countries, language knowledge appears to continue offering an advantage in terms of employment status.

For CY, DE, IT and LU, the positive effect of English knowledge that emerges for the overall population is actually driven by the language relation among the older age group, while no significant association is found for the younger one: for younger generations, English knowledge is no longer rewarded in terms of employment rates. The same holds for the positive effect of German knowledge in DK. For CY, it is likely that English becomes non-significant when only the young population is taken into account because most of the individuals in the 25-40 age group speak the language (92.8%, against 73.8% in the 41-64 age group – see Table A 12 in the Annex). This implies that for the younger age group, English knowledge is so widespread that it might not represent an added value on the labour market anymore. A similar explanation might

be offered for LU, in spite of the fact that the difference in the share of English knowledge between the two age groups is narrower (95.4% vs. 90.5%).

For CZ, the lack of significant results for the overall population is actually hiding different patterns for the two age groups; when separating the young and the old population, the significant association between language knowledge and employment becomes evident in the latter group. A similar pattern applies to SK, where only among the oldest a positive effect of both English and German emerges. This suggests that while older generations are rewarded for knowing English and German, the more recent ones are not anymore.

On the opposite side, SE is characterised by a positive effect of English knowledge only among the younger population, while a similar result does not emerge for the older age group.

For EL, FI and NL, an interesting pattern emerges concerning English knowledge: the positive association found between knowing English and being employed for the overall population is in fact actually hiding two different underlying types of behaviour for the different age groups. In these countries, older individuals show a labour market advantage related to language knowledge at any level while younger individuals benefit from proficiency in English only. This might imply that for the younger population the labour market is somewhat more selective in terms of the real ability of individuals to use the foreign language, while for the older population even a lower level is rewarded in the same way.

MT and PL display mixed results. In the former, the positive association of both English and French knowledge with employment chances found for the overall population is driven by separate groups: only English proficiency appears to be rewarded among the younger population, while the labour market advantage is associated to French among older individuals. For PL, the overall positive effect of Russian is driven by the advantage granted to the older age group, while an employment premium seems to be connected to English proficiency and German knowledge among the younger population.

Negative effects of language knowledge are difficult to understand. Data suggest that in the 41-64 age group knowledge of French in DE and of Russian in SI are negatively correlated to employment status. These unexpected results might be driven by unobservable characteristics that are not captured by currently available data.

Table 13. Knowledge of specific foreign languages and employment status in EU Member States – Age group 41-64

	AT	BE	BG	CY	CZ	DE
Knowing English	-0.076	0.199	0.058	**0.458***	**0.488***	**0.405****
	(0.177)	(0.180)	(0.220)	(0.215)	(0.241)	(0.125)
Proficient in English	0.426	0.097	0.503	**1.055*****	0.039	**0.533***
	(0.289)	(0.317)	(0.558)	(0.281)	(0.614)	(0.262)
Knowing French	-0.120		0.129	-0.376	0.068	**-0.367***
	(0.245)		(0.340)	(0.377)	(0.639)	(0.167)
Knowing German		0.288	-0.361	1.042	**0.437***	
		(0.222)	(0.257)	(0.849)	(0.195)	
Knowing Spanish	-0.231	-0.233			0.000	0.087
	(0.464)	(0.323)			(.)	(0.261)
Knowing Russian			0.222		0.081	0.195
			(0.144)		(0.152)	(0.175)
Observations	1987	2565	2663	991	3339	3247

	DK	EE	EL	ES	FI	FR
Knowing English	0.358	0.410	**0.393***	**0.192***	**0.562***	0.118
	(0.376)	(0.223)	(0.157)	(0.092)	(0.232)	(0.109)
Proficient in English	-0.209	0.775	-0.199	**0.548***	0.053	**-0.574***
	(0.295)	(0.783)	(0.361)	(0.246)	(0.297)	(0.262)
Knowing French	-0.264		0.160	0.094	0.049	
	(0.394)		(0.380)	(0.095)	(0.284)	
Knowing German	**0.519***	0.633	-0.194	-0.033	0.103	-0.091
	(0.242)	(0.340)	(0.356)	(0.219)	(0.208)	(0.182)
Knowing Spanish	0.572				-0.149	-0.118
	(1.063)				(0.318)	(0.167)
Knowing Russian		0.085			-0.351	
		(0.241)			(0.269)	
Observations	1442	1295	2770	7546	1873	5351

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table 13. Knowledge of specific foreign languages and employment status in EU Member States – Age group 41-64 – Cont.

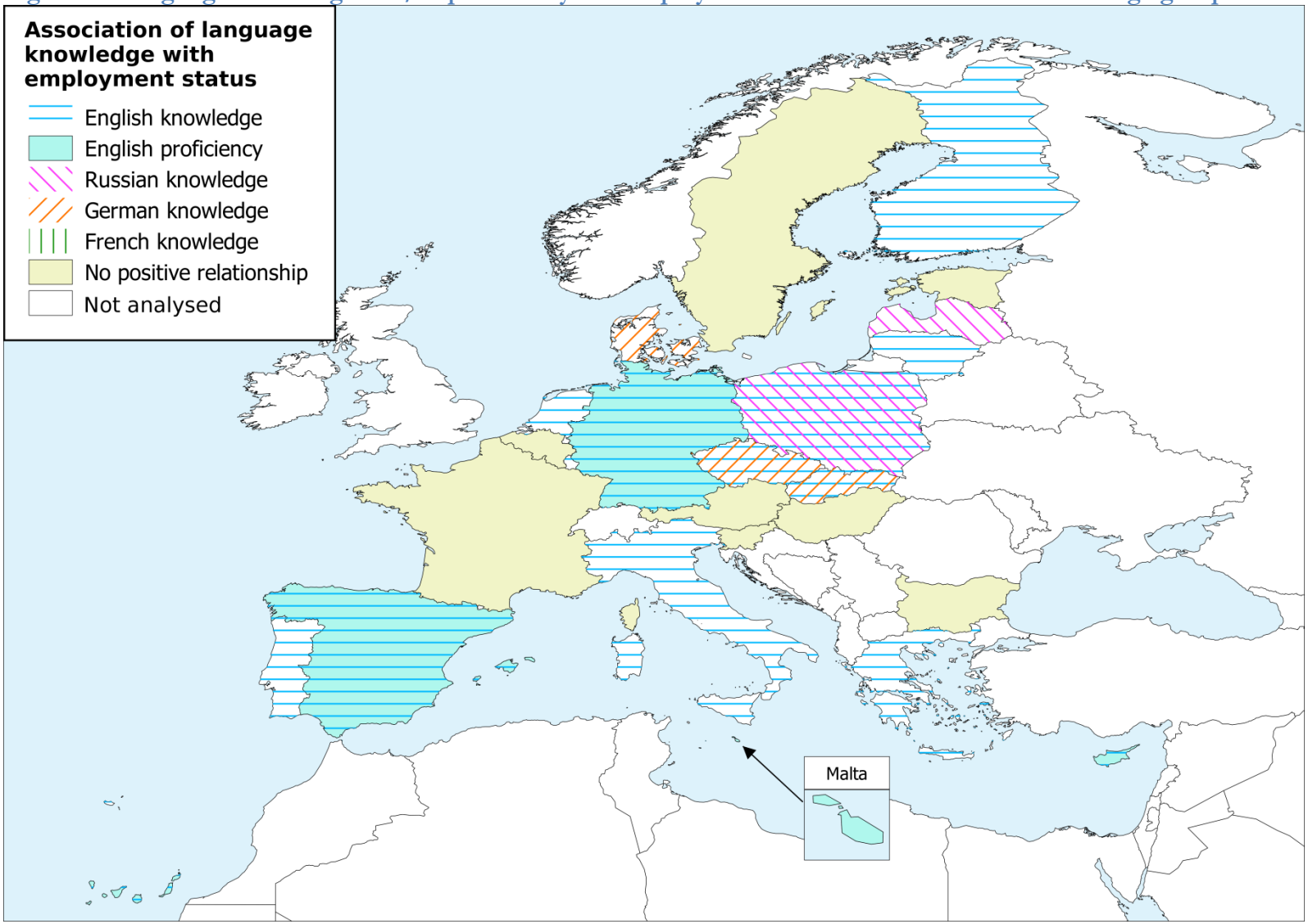
	HU	IT	LT	LU	LV	MT
Knowing English	0.114	**0.455*****	**0.542****	**0.898****	0.201	0.381
	(0.252)	(0.107)	(0.175)	(0.307)	(0.164)	(0.215)
Proficient in English	-0.489	-0.124	0.744	0.355	0.430	**0.380***
	(0.591)	(0.333)	(0.639)	(0.365)	(0.453)	(0.173)
Knowing French	-0.313	0.064	0.715	0.094	0.120	0.389
	(0.937)	(0.108)	(0.474)	(0.279)	(0.773)	(0.269)
Knowing German	0.118	0.064	0.312	0.028	0.173	0.455
	(0.212)	(0.215)	(0.201)	(0.235)	(0.184)	(0.536)
Knowing Spanish		0.191		0.289		1.122
		(0.291)		(0.307)		(0.678)
Knowing Russian	0.591		0.403		**0.506*****	
	(0.456)		(0.211)		(0.138)	
Observations	2952	4393	2111	1234	1932	1476

	NL	PL	PT	SE	SI	SK
Knowing English	**0.437***	**0.237***	**0.337*****	0.118	0.359	**0.883***
	(0.207)	(0.115)	(0.102)	(0.313)	(0.191)	(0.383)
Proficient in English	0.116	-0.095	0.077	0.024	0.165	-0.693
	(0.290)	(0.446)	(0.228)	(0.267)	(0.269)	(0.864)
Knowing French	-0.061	-0.206	0.173	0.498	-0.391	-0.371
	(0.228)	(0.311)	(0.090)	(0.340)	(0.329)	(0.768)
Knowing German	0.193	-0.044	-0.195	0.131	0.048	**0.620***
	(0.192)	(0.098)	(0.241)	(0.224)	(0.163)	(0.260)
Knowing Spanish	0.117	0.221	0.042	-0.093	-0.500	
	(0.440)	(0.512)	(0.110)	(0.337)	(0.475)	
Knowing Russian		**0.205****			**-0.704***	0.201
		(0.064)			(0.306)	(0.188)
Observations	1797	9759	5909	1335	1484	1737

Source: CRELL calculations based on AES 2011. The age group for HU and MT is 40-64. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Figure 18. Language knowledge and/or proficiency and employment status in EU Member States – Age group 41-64



PART VI

Conclusion and Discussion

This study offers empirical evidence of the positive relation between knowing foreign languages and employment status in the European Union. Moreover, it shows that knowing languages at a proficient level - being able to understand a wide range of demanding texts and use the language flexibly – is associated with an advantage in terms of employment for some individuals. As such, and in accord with the literature on human capital reviewed, this report makes the case for the employment benefit of language knowledge in the EU. In particular, it adds new evidence concerning the value of this type of human capital for employment and describes differences and similarities across the Member States analysed.

Considering the pooled results for the 24 Member States that are included in the regression analyses, knowing one foreign language and of knowing two or more foreign languages have a strong association with employment, while being proficient in at least one foreign language has a less pronounced association with employment. Regarding the results for individual countries, in 17 out of 24 Member States knowing foreign languages and/or being proficient in at least one is positively related with employment status.

With respect to the association between knowledge of specific foreign languages and employment chances, the EU population surveyed in the AES 2011 benefits more from knowing English and Russian. The findings show a clear geographical divide in this respect, with knowing Russian having a positive relation with employment in the great majority of Eastern European Member States and English a positive one in most of the remaining Member States. Furthermore, the patterns concerning the association of knowledge of specific foreign languages with employment show that distinct languages have an effect in different countries. In particular, whereas the positive relation between knowing English and being employed is prevalent in several Member States, German and French are also associated with higher rates of employment in DK and MT, respectively.

Lastly, results indicate that there are generational differences regarding the association between knowing a foreign language and knowing it proficiently on employment status. For example, for the age group 25-40 knowing English proficiently has a positive impact on employment in 5 Member States, whereas simply knowing English is not associated with employment advantages. Conversely, for the older age group 41-64 only in one country is

English proficiency positively related to employment and in only 3 does knowing German have a positive relation with the likelihood of being employed. Nonetheless, in most Member States knowledge of English positively affects employment in this age group.

Taken together, these findings suggest that knowing foreign languages is associated with higher rates of employment in most EU Member States and that knowing them proficiently is increasingly more important. Results are likely to reflect the social, cultural and economic diversity in EU Member States, which may shape the association between language knowledge and employment status. Therefore, the case for the employment benefits of knowing languages in the EU should be made within a wider understanding of the multitude of factors that may influence labour market opportunities. One such factor that could not be addressed in this study due to small sample sizes relates to the advantages that knowing the language (s) of the host country might have for immigrant populations. Other factors include the type of jobs and occupations for which knowing languages brings an added advantage to individuals, both in terms of employment opportunities and wage premiums. The AES data do not allow for a description of the main economic sectors linked to language use at work. Perhaps more importantly, given that this void occurs in conjunction with the absence of information on individual wages any analysis with AES data cannot capture wage returns according to different sectors of the economy.

Nonetheless, the findings of the present analyses add to our understanding of the importance of knowing foreign languages for increasing employment opportunities and provide evidence for a large number of Member States. More specifically, the evidence provided complements exiting research specific to the employment advantages of knowing foreign languages for immigrant populations. We show that in more than two thirds of Member States, for the general native population and irrespective of labour sector, there is a positive association between knowing foreign languages and being employed. Moreover, we also show that a proficient level of language mastery is linked to increased employment rates for some individuals in some Member States. In addition, our results corroborate previous findings and confirm similar generation gaps previously identified. For example, in what concerns foreign language use at work, Tucci and Wagner's (2004) study found that in 13 Member States about one quarter of the EU work force between 26 and 35 reported using a foreign language.

Lastly, in what concerns the knowledge of different languages and its relationship with employment chances, this study provides evidence that there is great diversity among countries. Even though the advantage of knowing English stands out, different languages are associated

with distinct employment levels in different countries. Similarly, a recent study of French enterprises found that they ask for language competences at the onset of the recruitment process and that, although English is highly requested, German, Spanish and Italian competences are also requested (Lemp, 2015). Again, our study could not investigate sector-specific advantages, but its results indicate that there is a parallel between language diversity advantages for the employment status of the general working-age population in most Member States and similar advantages for sector specific employment. Therefore, findings suggest that learning languages is important for the employment prospects of EU citizens.

Limitations and Future Studies

The AES is part of the EU statistics on lifelong learning and is designed to capture European citizens' participation in education and training activities. The language module in this survey relies on self-reported information and was not implemented in the UK in 2011 and in RO the high non-response rate precluded data analyses. Thus, for the countries where language data exist and can be considered reliable, individuals self-assessed their language knowledge. Therefore, in much the same way as the information collected in the 2012 Eurobarometer "Europeans and their Languages" this survey is indicative of European citizens' perception of their language knowledge rather than a direct measurement of language abilities (European Commission, 2012a). A direct assessment of language skills could offer a better estimate of the advantages linked to language knowledge and employment chances. This undertaking would complement the information already obtained as a result of testing secondary school students in 14 Member States. The ESLC, as previously mentioned in this report, revealed that a large share of students do not reach proficient levels (B1 and B2) of language knowledge in the first and second foreign languages they study at school, which suggests that continued efforts are needed to improve students' language skills from the very early stages of education.

Future surveys and studies that collect and use information on income would allow for estimates that assess a possible individual wage premium associated with foreign language knowledge. If information on individual income were available, it would be possible to estimate wage returns. Moreover, information about language use at work would allow for a better understanding of how important language use might be in different sectors of the economy. Earlier statistics collected by EUROSTAT captured this, namely the European Household Survey (ECHP) running from 1994 to 2003.

In sum, the limitations highlighted point to data accessibility gaps that, if addressed in future EU statistics, could help capture a more comprehensive state of play with respect to the language knowledge of European citizens and its relationship with labour market outcomes.

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ANNEX

Table A 1. Number of languages learned per pupil for ISCED 3 the last 12 years in EU Member States in four-year gaps (2000, 2004, 2008 and 2012)

	ISCED 3				ISCED 3 GENERAL				ISCED 3 VOCATIONAL			
Country	2000	2004	2008	2012	2000	2004	2008	2012	2000	2004	2008	2012
EU 28	:	:	1.3	1.4	:	:	1.6	1.4	:	:	1.1	1.2
EU 27	1.2	1.3	1.3	1.4	1.6	1.6	1.6	1.4	1.2	1.0	1.1	1.2
BE	1.3	1.8	1.7	1.7	2.2	2.2	2.2	2.2	:	1.4	1.3	1.3
BG	1.2	1.4	1.6	1.6	1.8	1.7	1.8	1.8	0.7	1.2	1.5	1.5
CZ	1.3	1.4	1.5	1.5	2	2.0	2.0	2.0	1.1	1.3	1.3	1.3
DK	:	:	:	0.9	1.8	1.8	1.6	1.6	0.9	:	:	0.3
DE	0.7	0.8	0.9	0.9	1.4	1.4	1.4	1.5	0.4	0.4	0.5	0.4
EE	2.1	2.2	2.2	2.0	2.3	2.3	2.3	2.2	1.8	1.8	1.8	1.7
IE	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1	:	1	1.0
EL	:	1.0	1.0	0.9	1.1	1.1	1.1	1.0	0.9	0.8	0.0	0.7
ES	1.1	1.2	1.2	:	1.1	1.3	1.2	1.2	1	1.0	1.0	:
FR	1.6	1.7	1.7	1.8	1.9	2.0	2.0	2.0	1	1.1	1.1	1.3
HR	:	:	:	1.5	:	:	:	1.9	:	:	:	1.3
IT	1.2	1.3	1.3	1.4	1.2	1.3	1.3	1.3	1.1	1.4	1.4	1.4
CY	1.9	1.5	1.7	1.7	2	1.6	1.8	1.8	1	1.1	1.2	1.2
LV	:	:	1.2	1.6	1.9	1.8	1.8	2.0	:	:	:	1.1
LT	1.8	1.4	1.4	1.3	1.9	1.6	1.5	1.4	1.6	0.9	0.9	0.9
LU	2.2	2.2	2.3	2.4	3	3.0	3.0	3.1	1.7	1.9	2.0	2.1
HU	1.2	1.2	1.3	1.2	1.2	1.3	1.4	1.4	1.2	0.7	0.8	0.7
MT	0.8	0.4	:	1.7	1.6	0.7	:	1.8	:	:	:	1.0
NL	:	:	:	1.2	1.9	2.6	2.6	1.8	:	:	:	0.9
AT	1.3	:	:	1.3	1.9	:	:	1.8	:	:	:	1.2
PL	1.4	1.6	1.5	1.6	2	1.9	1.5	1.6	1.1	1.3	1.6	1.6
PO	:	0.8	:	0.8	:	0.8	:	0.7	:	1.0	:	1.0
RO	1.3	1.4	1.8	2.0	1.9	1.9	2.0	2.0	1	1.1	1.6	2.0
SI	1.5	1.6	1.5	1.6	2	2.0	2.0	2.0	1.3	1.4	1.3	1.3
SK	1.4	1.5	1.6	1.8	2	2.0	2.0	2.0	1.3	1.3	1.4	1.7
FI	:	:	:	:	2.8	2.8	2.7	2.7	:	:	:	:
SE	1.7	1.6	1.6	1.6	2.2	2.1	2.2	2.0	1.1	1.2	1.1	1.1
UK	:	0.8	:	:	0.8	0.8	0.6	0.5	:	:	:	:

Source: UOE data. Note: ":" = data either not available or not reliable due to very small sample size.

Table A 2. Percentage of students studying none, one or two or more foreign languages in ISCED 3 General and Vocational during the 12 year period 2000-2012 in EU Member States in four-year gaps (2000, 2004, 2008 and 2012)

	ISCED 3 GENERAL									ISCED 3 VOCATIONAL								
COUNTRY	**2004**			**2008**			**2012**			**2004**			**2008**			**2012**		
	None	1	2 or +	None	1	2 or +	None	1	2 or +	None	1	2 or +	None	1	2 or +	None	1	2 or +
EU 28	:	:	:	11.1	35.7	53.1	12.8	36.6	50.6	:	:	:	:	:	:	9.4	49.1	41.5
EU 27	8.3	54.7	:	11.2	35.9	52.9	12.9	36.7	50.3	8.5	63.6	:	5.6	57.9	36	9.5	48.6	41.9
BE	0.7	10.5	:	1.2	10.9	87.9	0.1	10.8	89.1	24	25.3	:	24.9	25.6	49.5	22	27.6	50.4
BG	2.8	20.3	:	0.2	24.3	75.5	0.2	25.5	74.3	29.8	20.9	:	2.6	48.8	48.6	2.3	45	52.7
CZ	0	:	:	0	0.0	100.0	0.1	1.2	98.8	1	73.2	:	2	66.1	31.8	5.1	56.9	38
DK	3.4	29.0	67.6	:	38.9	61.1	1.7	39.1	59.2	:	:	:	:	:	:	79.6	15	5.4
DE	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	:	11.1	:	0.7	1.7	97.7	1.1	7.8	91.1	:	21.3	:	10.4	11.9	77.8	12.9	19.9	67.2
IE	18.1	76.7	:	19	72.7	8.4	20.1	72.3	7.6	:	:	:	6.5	90.9	2.7	5.4	90.9	3.7
EL	1.4	91.9	:	1	91.1	7.9	0.8	95.7	3.5	22.3	76	:	20.8	78.3	0.9	40.1	59.8	0.1
ES	3.7	67.6	:	5	67.2	27.7	3	72.5	24.6	:	96.5	:	0	97.4	2.6	:	:	:
FR	:	9.8	:	0	9.8	90.2	0	5.5	94.5	:	89.1	:	1.9	88.2	9.9	2	66	31.9
HR	:	:	:	:	:	:	:	12.1	87.9	:	:	:	:	:	:	2.7	73.7	23.6
IT	2.2	71.7	:	2.2	71.6	26.2	3.6	71.4	24.9	5.2	55.4	:	3.7	58	38.3	4.6	54.5	41
CY	:	100.0	:	0	0	100.0	0	17.6	82.4	:	100	:	0	0	100	0.3	89	10.6
LV	0.7	25.5	:	1.4	22.6	76.0	0.5	16.6	82.9	:	:	:	:	:	:	21.8	42.6	35.5
LT	0.9	45.3	:	1.8	44.1	54.1	1.6	53.4	45	21.5	62.8	:	24.7	61.3	13.9	22	64.9	13.1
LU	:	:	:	0	0.0	100.0	:	:	100	12.3	27.2	:	11.1	25	63.8	11.4	22.9	65.6
HU	:	:	:	1.7	55.2	43.1	0.5	54.2	45.3	:	:	:	21.7	77.6	0.7	23	76.3	0.7
MT	:	:	:	:	:	:	:	35.3	64.7	100	:	:	:	:	:	:	100	:
NL	:	0.5	:	0	0.2	99.8	:	30.2	69.8	:	:	:	:	:	:	26.3	61	12.6
AT	:	:	:	:	:	:	0.2	25.6	74.2	:	:	:	:	:	:	2.3	77	20.7
PL	:	:	:	:	:	:	2.2	27.8	70.1	:	:	:	:	:	:	4	31.1	64.9
PT	:	:	:	:	:	:	39.2	55.5	5.3	:	:	:	:	:	:	23.2	67.1	9.7
RO	:	8.9	:	0	6.7	93.3	:	1.6	98.4	9.6	68.1	:	0	36.1	63.9	0.5	3.9	95.6
SI	1.1	0.5	:	1.8	1.9	96.3	1.7	0.3	98	4.5	55.7	:	5.6	63	31.4	3.6	62.7	33.7
SK	:	0.9	:	0	0.7	99.3	:	1.0	99	0.8	70.2	:	0.2	62.7	37.1	0.2	33.7	66.2
FI	:	0.4	:	0	0.4	99.6	:	0.4	99.6	:	:	:	:	:	:	:	:	:
SE	0	7.4	:	0	8.6	91.3	0	19.9	80.1	1	81	:	0.9	88.5	10.6	0.5	88.5	11.5
UK	31	62.9	:	50.7	43	6.3	60	35.6	4.4	:	:	:	:	:	:	:	:	:

Source: UOE data. Notes: "()" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size.

Table A 3. Number of foreign languages known in EU Member States (AES 2011)

	Number of languages (proportions)				Average n. of languages
COUNTRY	**0**	**1**	**2**	**3+**	
AT	0.219	0.505	0.189	0.088	1.184
BE	0.421	0.138	0.235	0.206	1.280
BG	0.611	0.244	0.117	0.028	0.571
CY	0.161	0.567	0.192	0.080	1.220
CZ	0.309	0.396	0.224	0.071	1.076
DE	0.215	0.419	0.263	0.103	1.290
DK	0.059	0.263	0.431	0.247	2.029
EE	0.145	0.241	0.351	0.263	1.802
EL	0.419	0.430	0.122	0.030	0.770
ES	0.489	0.340	0.126	0.045	0.741
FI	0.082	0.131	0.295	0.492	2.625
FR	0.412	0.349	0.192	0.046	0.882
HU	0.632	0.259	0.092	0.017	0.498
IE	0.727	0.208	0.052	0.013	0.354
IT	0.401	0.396	0.166	0.037	0.846
LT	0.027	0.407	0.447	0.119	1.680
LU	(0.011)	0.050	0.220	0.720	2.972
LV	0.051	0.357	0.461	0.131	1.702
MT	0.109	0.247	0.457	0.186	1.771
NL	0.139	0.252	0.371	0.237	1.767
PL	0.381	0.387	0.192	0.040	0.899
PT	0.415	0.266	0.205	0.115	1.048
SE	0.082	0.316	0.297	0.305	1.994
SI	0.076	0.150	0.326	0.449	2.406
SK	0.147	0.302	0.335	0.216	1.679
EU average	0.345	0.356	0.210	0.089	1.076

Source: CRELL calculations based on AES 2011 data. Notes: "()" = Data lack reliability due to small sample size.

Table A 4. Number of foreign languages known in EU Member States by gender (AES 2011)

	Males					Females				
COUNTRY	**Number of languages (proportions)**				**Average n. of languages**	**Number of languages (proportions)**				**Average n. of languages**
	0	**1**	**2**	**3+**		**0**	**1**	**2**	**3+**	
AT	0.241	0.511	0.180	0.069	1.109	0.197	0.499	0.198	0.106	1.259
BE	0.393	0.139	0.250	0.218	1.345	0.450	0.137	0.220	0.194	1.215
BG	0.629	0.240	0.102	0.029	0.538	0.592	0.248	0.132	0.027	0.605
CY	0.148	0.619	0.177	0.055	1.164	0.173	0.519	0.205	0.102	1.271
CZ	0.325	0.401	0.207	0.067	1.036	0.293	0.390	0.241	0.075	1.116
DE	0.211	0.443	0.254	0.093	1.26	0.219	0.396	0.272	0.114	1.320
DK	0.063	0.265	0.413	0.259	2.052	0.054	0.261	0.449	0.236	2.006
EE	0.150	0.257	0.344	0.249	1.752	0.141	0.226	0.357	0.276	1.848
EL	0.425	0.437	0.113	(0.024)	0.739	0.412	0.423	0.130	0.035	0.802
ES	0.486	0.337	0.129	0.047	0.754	0.492	0.342	0.123	0.042	0.727
FI	0.104	0.172	0.309	0.414	2.35	0.059	0.089	0.281	0.571	2.905
FR	0.407	0.371	0.181	0.041	0.869	0.418	0.329	0.203	0.050	0.894
HU	0.634	0.257	0.094	0.015	0.494	0.630	0.261	0.090	0.019	0.502
IE	0.751	0.189	0.047	0.013	0.323	0.704	0.225	0.058	0.013	0.383
IT	0.414	0.413	0.140	0.034	0.802	0.389	0.380	0.191	0.040	0.890
LT	0.031	0.449	0.409	0.111	1.619	0.022	0.368	0.483	0.127	1.735
LU	:	:	0.249	0.694	2.91	:	:	0.190	0.745	3.035
LV	0.062	0.377	0.441	0.120	1.647	0.041	0.338	0.478	0.142	1.752
MT	0.140	0.245	0.468	0.147	1.661	0.078	0.250	0.446	0.225	1.884
NL	0.112	0.230	0.440	0.218	1.815	0.167	0.274	0.302	0.257	1.718
PL	0.403	0.387	0.171	0.040	0.856	0.360	0.387	0.213	0.041	0.942
PT	0.403	0.273	0.199	0.125	1.078	0.426	0.259	0.210	0.105	1.020
SE	0.079	0.342	0.299	0.279	1.94	0.084	0.289	0.295	0.332	2.051
SI	0.062	0.173	0.312	0.453	2.426	0.091	0.125	0.340	0.444	2.386
SK	0.165	0.307	0.321	0.206	1.622	0.129	0.298	0.348	0.225	1.736
EU average	0.346	0.367	0.203	0.084	1.055	0.343	0.345	0.218	0.094	1.097

Source: CRELL calculations based on AES 2011 data. Notes: "()" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size.

Table A 5. Number of foreign languages known in EU Member States by age group (AES 2011)

	25-34					35-54					55-64				
COUNTRY	**Number of languages (proportions)**				**Average n. of languages**	**Number of languages (proportions)**				**Average n. of languages**	**Number of languages (proportions)**				**Average n. of languages**
	0	**1**	**2**	**3+**		**0**	**1**	**2**	**3+**		**0**	**1**	**2**	**3+**	
AT	0.119	0.523	0.235	0.123	1.401	0.219	0.516	0.184	0.081	1.173	0.328	0.457	0.150	0.065	0.978
BE	0.315	0.134	0.320	0.231	1.529	0.414	0.146	0.233	0.208	1.291	0.543	0.126	0.153	0.178	1.008
BG	0.476	0.351	0.132	(0.041)	0.749	0.612	0.232	0.129	0.027	0.580	0.736	0.166	0.080	(0.018)	0.385
CY	(0.048)	0.617	0.237	0.098	1.412	0.156	0.559	0.199	0.085	1.250	0.336	0.513	0.109	(0.042)	0.867
CZ	0.185	0.465	0.277	0.072	1.256	0.326	0.377	0.218	0.080	1.074	0.415	0.357	0.177	0.051	0.877
DE	0.115	0.431	0.320	0.135	1.527	0.199	0.438	0.266	0.097	1.289	0.349	0.363	0.200	0.087	1.063
DK	(0.030)	0.284	0.406	0.281	2.101	0.045	0.262	0.447	0.247	2.062	0.115	0.248	0.419	0.217	1.892
EE	0.086	0.195	0.380	0.339	2.073	0.144	0.230	0.356	0.270	1.824	0.216	0.320	0.305	0.158	1.433
EL	0.209	0.593	0.152	(0.045)	1.047	0.403	0.441	0.129	0.026	0.785	0.692	0.219	:	:	0.423
ES	0.394	0.403	0.153	0.050	0.870	0.484	0.344	0.126	0.047	0.751	0.638	0.239	0.090	0.033	0.533
FI	:	:	0.324	0.546	2.919	0.042	0.123	0.309	0.525	2.763	0.211	0.164	0.243	0.381	2.107
FR	0.302	0.375	0.266	0.058	1.091	0.412	0.359	0.183	0.045	0.870	0.519	0.305	0.142	0.035	0.707
HU	0.423	0.377	0.174	(0.026)	0.808	0.661	0.252	0.072	0.016	0.446	0.795	0.149	0.045	(0.011)	0.278
IE	0.644	0.268	0.071	0.017	0.467	0.734	0.201	0.052	0.013	0.345	0.838	0.130	:	:	0.201
IT	0.224	0.488	0.233	0.055	1.130	0.399	0.402	0.163	0.036	0.846	0.584	0.291	0.105	0.020	0.566
LT	(0.045)	0.210	0.558	0.188	1.921	(0.019)	0.444	0.429	0.108	1.644	(0.023)	0.547	0.363	0.067	1.484
LU	:	:	0.180	0.789	3.177	(0.012)	0.059	0.210	0.719	2.930	:	:	0.297	0.633	2.832
LV	0.037	0.191	0.574	0.199	1.981	0.048	0.391	0.441	0.120	1.660	0.077	0.481	0.368	0.075	1.458
MT	0.074	0.178	0.512	0.236	1.972	0.082	0.233	0.499	0.185	1.845	0.191	0.335	0.333	0.142	1.458
NL	0.111	0.340	0.353	0.196	1.694	0.121	0.223	0.407	0.249	1.842	0.216	0.228	0.302	0.254	1.659
PL	0.223	0.439	0.278	0.060	1.190	0.410	0.384	0.170	0.037	0.840	0.512	0.331	0.134	0.023	0.672
PT	0.236	0.337	0.269	0.159	1.388	0.411	0.267	0.209	0.113	1.052	0.623	0.184	0.124	0.069	0.665
SE	0.074	0.257	0.347	0.322	2.097	0.069	0.326	0.294	0.311	2.020	0.116	0.353	0.255	0.276	1.837
SI	(0.035)	0.113	0.305	0.547	2.663	0.084	0.139	0.339	0.439	2.383	0.102	0.207	0.321	0.370	2.197
SK	0.099	0.272	0.376	0.253	1.861	0.147	0.296	0.335	0.223	1.692	0.211	0.358	0.280	0.151	1.408
EU average	0.231	0.399	0.263	0.107	1.285	0.34	0.363	0.209	0.088	1.076	0.476	0.295	0.157	0.072	0.855

Source: CRELL calculations based on AES 2011 data. Notes: "()" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size.

Table A 6. Number of foreign languages known in EU Member States by level of educational attainment (AES 2011)

	Low education					Medium education					High education				
COUNTRY	**Number of languages (proportions)**				**Average n. of languages**	**Number of languages (proportions)**				**Average n. of languages**	**Number of languages (proportions)**				**Average n. of languages**
	0	**1**	**2**	**3+**		**0**	**1**	**2**	**3+**		**0**	**1**	**2**	**3+**	
AT	0.432	0.408	0.109	(0.051)	0.799	0.215	0.559	0.163	0.064	1.107	0.065	0.395	0.342	0.198	1.759
BE	0.673	0.158	0.114	0.054	0.561	0.427	0.149	0.234	0.190	1.234	0.186	0.108	0.345	0.361	1.984
BG	0.915	:	:	:	0.095	0.674	0.235	0.080	(0.012)	0.432	0.218	0.403	0.294	0.086	1.277
CY	0.487	0.365	:	:	0.684	0.105	0.632	0.187	0.077	1.255	(0.025)	0.623	0.236	0.116	1.499
CZ	0.679	0.247	:	:	0.402	0.333	0.432	0.187	0.049	0.961	(0.020)	0.322	0.459	0.199	1.904
DE	0.340	0.457	0.150	(0.053)	0.926	0.261	0.463	0.215	0.060	1.093	0.082	0.326	0.391	0.202	1.788
DK	0.157	0.328	0.358	0.157	1.606	0.050	0.288	0.445	0.217	1.974	:	:	0.456	0.338	2.346
EE	0.299	0.342	0.218	(0.140)	1.222	0.176	0.290	0.334	0.200	1.607	0.068	0.154	0.403	0.376	2.195
EL	0.780	0.197	:	:	0.243	0.353	0.511	0.118	(0.019)	0.806	0.085	0.579	0.252	0.084	1.361
ES	0.702	0.242	0.044	0.012	0.371	0.418	0.381	0.150	0.051	0.846	0.242	0.447	0.224	0.087	1.185
FI	0.182	0.220	0.309	0.288	1.905	0.103	0.174	0.348	0.375	2.315	:	:	0.223	0.734	3.359
FR	0.600	0.301	0.084	(0.015)	0.519	0.476	0.326	0.171	0.026	0.753	0.158	0.425	0.318	0.099	1.381
HU	0.911	:	:	:	0.102	0.716	0.224	0.052	(0.007)	0.351	0.180	0.498	0.265	0.057	1.212
IE	0.942	0.049	:	:	0.070	0.773	0.181	0.038	(0.008)	0.282	0.540	0.340	0.095	0.025	0.610
IT	0.673	0.259	0.058	(0.010)	0.407	0.223	0.495	0.237	0.046	1.114	0.079	0.536	0.295	0.090	1.421
LT	0.171	0.549	:	:	1.165	(0.020)	0.539	0.373	0.068	1.499	:	:	0.620	0.224	2.102
LU	:	:	0.271	0.663	2.806	:	:	0.225	0.719	2.943	:	:	0.186	0.756	3.107
LV	0.111	0.593	:	:	1.214	0.062	0.435	0.416	0.087	1.547	:	:	0.614	0.250	2.167
MT	0.153	0.312	0.442	0.093	1.492	:	:	0.523	0.309	2.213	:	:	0.450	0.446	2.469
NL	0.286	0.305	0.302	0.107	1.255	0.120	0.255	0.424	0.201	1.748	(0.040)	0.205	0.363	0.391	2.220
PL	0.790	0.181	:	:	0.249	0.434	0.407	0.139	0.019	0.747	0.069	0.422	0.400	0.109	1.571
PT	0.588	0.255	0.118	0.039	0.619	0.127	0.331	0.351	0.191	1.640	0.035	0.240	0.393	0.332	2.118
SE	0.144	0.490	0.251	0.115	1.398	0.079	0.347	0.296	0.278	1.926	0.063	0.210	0.315	0.412	2.308
SI	0.191	0.286	0.337	0.186	1.631	0.059	0.141	0.355	0.445	2.422	:	:	0.240	0.713	3.122
SK	0.371	0.403	:	:	0.902	0.176	0.340	0.324	0.160	1.510	(0.032)	0.185	0.387	0.396	2.265
EU average	0.609	0.272	0.090	0.029	0.548	0.328	0.398	0.205	0.069	1.038	0.118	0.365	0.334	0.182	1.651

Source: CRELL calculations based on AES 2011 data. Notes: "()" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size.

Table A 7. Number of foreign languages known in EU Member States by orientation of study (secondary education only) (AES 2011)

	General					Vocational				
COUNTRY	**Number of languages (proportions)**				**Average n. of languages**	**Number of languages (proportions)**				**Average n. of languages**
	0	**1**	**2**	**3+**		**0**	**1**	**2**	**3+**	
AT	:	:	0.298	0.294	1.947	0.149	0.616	0.178	0.057	1.162
BE	(0.323)	(0.171)	(0.315)	(0.191)	1.444	0.357	0.171	0.302	0.171	1.324
BG	0.536	0.337	:	:	0.619	0.567	0.324	:	:	0.558
CY	:	0.552	(0.294)	:	1.423	:	0.594	(0.226)	:	1.403
DE	:	:	0.438	0.228	1.945	0.195	0.550	0.214	(0.042)	1.112
EE	:	:	0.434	0.361	2.223	0.184	0.258	0.322	0.235	1.668
EL	0.242	0.592	:	:	0.957	0.216	0.607	:	:	0.98
ES	0.290	0.476	0.169	(0.065)	1.025	0.480	0.381	0.113	:	0.689
FR	0.216	0.400	0.313	(0.070)	1.251	0.469	0.343	0.17	(0.019)	0.74
HU						0.557	0.339	0.091	(0.014)	0.562
IT	(0.099)	0.582	0.222	(0.097)	1.335	0.189	0.501	0.264	0.046	1.174
LV	:	:	0.533	0.165	1.847	(0.036)	0.317	0.555	0.092	1.719
NL	:	:	:	:	1.722	0.123	0.277	0.442	0.158	1.678
PL	0.191	0.489	0.258	(0.062)	1.211	0.357	0.446	0.174	0.022	0.866
PT	0.148	0.375	0.320	0.156	1.516	(0.115)	0.333	0.351	0.200	1.668
SE	(0.084)	(0.204)	0.310	0.403	2.295	(0.048)	0.403	0.302	0.247	1.909
SI	:	:	:	0.797	3.258	(0.052)	0.127	0.359	0.462	2.456
SK	:	:	(0.366)	(0.229)	1.853	0.141	0.324	0.361	0.174	1.61
EU average	0.152	0.403	0.302	0.144	1.487	0.277	0.445	0.221	0.057	1.074

Source: CRELL calculations based on AES 2011 data. Notes: "0" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size. The reference sample is restricted to individuals with secondary education, and who graduated less than 20 years before the survey.

Table A 8. Data availability on orientation of study in EU Member States (AES 2011)

Country of residence	Orientation of the highest level of education or training successfully completed					
	1	2	-1	-2	-3	Total
	General education	Vocational education	No answer	Not applicable	Optional variable not in survey	
AT	275	1,437	0	4,042	0	5,754
BE	134	364	0	5,028	0	5,526
BG	598	790	0	4,785	0	6,173
CY	134	141	0	2,129	0	2,404
CZ	0	0	0	0	10,190	10,190
DE	362	920	0	4,931	0	6,213
DK	0	0	0	0	3,660	3,660
EE	220	363	0	2,741	0	3,324
EL	857	510	13	4,660	0	6,040
ES	983	975	492	15,379	0	17,829
FI	0	0	0	0	3,605	3,605
FR	879	1,747	1	11,230	0	13,857
HU	0	1,495	0	5,872	0	7,367
IE	0	1,313	0	11,269	0	12,582
IT	585	1,647	11	9,350	0	11,593
LT	0	0	0	0	5,388	5,388
LU	0	0	0	0	3,310	3,310
LV	426	553	0	4,069	0	5,048
MT	0	0	0	0	2,882	2,882
NL	42	421	0	2,573	0	3,036
PL	1,815	5,043	0	20,775	0	27,633
PT	1,269	516	0	12,404	0	14,189
RO	859	1,789	18	10,985	0	13,651
SE	236	445	0	2,415	0	3,096
SI	355	1,035	0	3,553	0	4,943
SK	228	1,426	0	3,346	0	5,000
UK	312	391	0	2,821	0	3,524

Source: CRELL calculations based on AES 2011 data.

Table A 9. Number of foreign languages known in EU Member States by employment status (AES 2011)

	Employed					Unemployed					Inactive				
COUNTRY	Number of languages				Average n. of languages	Number of languages				Average n. of languages	Number of languages				Average n. of languages
	0	1	2	3+		0	1	2	3+		0	1	2	3+	
AT	0.188	0.524	0.198	0.089	1.224	0.250	0.515	(0.160)	(0.075)	1.120	0.311	0.441	0.163	0.085	1.069
BE	0.360	0.129	0.271	0.240	1.453	0.518	0.185	0.198	0.099	0.927	0.569	0.148	0.141	0.142	0.888
BG	0.537	0.282	0.143	0.037	0.692	0.734	0.181	:	:	0.370	0.735	0.178	:	:	0.364
CY	0.115	0.602	0.203	0.080	1.282	(0.174)	0.523	0.211	(0.093)	1.251	0.381	0.424	(0.124)	(0.072)	0.894
CZ	0.276	0.407	0.238	0.079	1.140	0.450	0.332	0.160	(0.058)	0.837	0.387	0.374	0.192	0.047	0.917
DE	0.194	0.434	0.268	0.105	1.317	0.310	0.396	0.208	(0.085)	1.111	0.266	0.370	0.261	0.103	1.239
DK	0.043	0.254	0.455	0.248	2.075	:	:	0.342	0.304	2.039	0.121	0.292	0.363	0.224	1.832
EE	0.105	0.220	0.381	0.294	1.939	0.254	0.297	0.248	0.201	1.455	0.262	0.304	0.272	0.161	1.391
EL	0.353	0.481	0.132	0.034	0.854	0.349	0.460	0.146	(0.045)	0.906	0.621	0.292	:	:	0.476
ES	0.435	0.371	0.145	0.048	0.821	0.538	0.317	0.108	0.037	0.662	0.627	0.251	0.079	0.042	0.547
FI	0.058	0.123	0.303	0.515	2.722	(0.137)	(0.176)	0.314	0.373	2.247	0.148	0.144	0.260	0.448	2.406
FR	0.380	0.366	0.207	0.048	0.935	0.457	0.322	0.173	0.048	0.819	0.545	0.286	0.135	0.033	0.665
HU	0.563	0.304	0.112	0.020	0.595	0.739	0.204	:	:	0.329	0.750	0.176	0.060	(0.014)	0.340
IE	0.626	0.268	:	:	0.517	0.772	0.173	:	:	0.295	0.808	0.154	:	:	0.237
IT	0.330	0.439	0.190	0.041	0.952	0.392	0.391	0.164	(0.053)	0.884	0.573	0.298	0.110	0.020	0.581
LT	(0.011)	0.340	0.502	0.147	1.807	(0.040)	0.509	0.367	(0.084)	1.515	0.074	0.568	0.311	(0.047)	1.347
LU	(0.009)	0.046	0.203	0.742	3.016	:	:	:	(0.539)	2.591	:	:	0.271	0.656	2.851
LV	0.034	0.307	0.508	0.151	1.809	0.067	0.463	0.378	0.092	1.524	0.107	0.467	0.339	0.087	1.422
MT	0.079	0.206	0.491	0.224	1.921	(0.176)	(0.241)	0.429	(0.154)	1.597	0.160	0.335	0.393	0.111	1.493
NL	0.103	0.244	0.406	0.247	1.865	:	:	(0.469)	:	1.899	0.246	0.281	0.265	0.208	1.480
PL	0.319	0.411	0.220	0.050	1.012	0.450	0.360	0.161	0.029	0.772	0.516	0.334	0.129	0.020	0.656
PT	0.351	0.285	0.232	0.132	1.176	0.455	0.257	0.182	0.105	0.968	0.620	0.200	0.122	0.059	0.638
SE	0.071	0.316	0.300	0.313	2.031	(0.124)	(0.249)	0.308	0.319	1.990	0.125	0.340	0.278	0.256	1.796
SI	0.052	0.120	0.333	0.494	2.553	(0.092)	0.170	0.262	0.476	2.438	0.133	0.221	0.325	0.321	2.013
SK	0.132	0.290	0.347	0.230	1.740	0.174	0.328	0.326	0.173	1.537	0.202	0.349	0.282	0.167	1.459
EU average	0.291	0.377	0.233	0.099	1.178	0.438	0.337	0.161	0.064	0.874	0.468	0.301	0.162	0.070	0.859

Source: CRELL calculations based on AES 2011 data. Notes: "()" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size. While the sample size for computing IE figures is large enough, it should be pointed out that the country has a very high share of missing information on employment status (54%).

Table A 10. Share of individuals who know a foreign language proficiently in EU Member States by gender, age and level of education (AES 2011)

	Total	Gender		Age group			Educational level		
COUNTRY		**Males**	**Females**	**25-34**	**35-54**	**55-64**	**Low**	**Medium**	**High**
AT	0.234	0.225	0.242	0.311	0.229	0.160	0.127	0.180	0.503
BE	0.175	0.196	0.154	0.239	0.170	0.123	0.075	0.145	0.298
BG	0.088	0.083	0.094	0.125	0.087	0.054	(0.018)	0.034	0.266
CY	0.330	0.324	0.335	0.411	0.328	0.215	(0.033)	0.220	0.608
CZ	0.116	0.120	0.112	0.179	0.107	0.065	:	0.063	0.384
DE	0.195	0.200	0.190	0.298	0.185	0.120	0.193	0.140	0.297
DK	0.371	0.404	0.338	0.515	0.375	0.235	0.212	0.306	0.546
EE	0.302	0.295	0.309	0.413	0.264	0.256	(0.145)	0.231	0.431
EL	0.125	0.110	0.140	0.186	0.120	0.072	(0.020)	0.063	0.363
ES	0.144	0.150	0.138	0.176	0.145	0.099	0.066	0.151	0.250
FI	0.268	0.265	0.272	0.437	0.267	0.121	(0.106)	0.204	0.427
FR	0.113	0.118	0.109	0.136	0.117	0.085	0.079	0.063	0.213
HU	0.082	0.084	0.079	0.151	0.067	0.039	:	0.035	0.270
IE	0.048	0.046	0.050	0.069	0.047	0.018	(0.007)	0.031	0.088
IT	0.086	0.082	0.089	0.139	0.080	0.048	0.032	0.089	0.234
LT	0.483	0.489	0.476	0.453	0.505	0.461	0.240	0.420	0.644
LU	0.716	0.709	0.722	0.747	0.713	0.685	0.618	0.705	0.792
LV	0.516	0.503	0.528	0.525	0.530	0.471	0.390	0.455	0.674
MT	0.484	0.446	0.522	0.579	0.499	0.371	0.336	0.691	0.880
NL	0.235	0.272	0.198	0.249	0.256	0.168	0.112	0.198	0.384
PL	0.082	0.079	0.085	0.156	0.061	0.036	:	0.034	0.240
PT	0.158	0.166	0.152	0.236	0.154	0.084	0.072	0.244	0.407
SE	0.447	0.458	0.436	0.605	0.457	0.268	0.244	0.382	0.613
SI	0.454	0.494	0.411	0.513	0.446	0.410	0.330	0.414	0.675
SK	0.305	0.315	0.295	0.332	0.312	0.252	(0.185)	0.267	0.427
Total	0.158	0.163	0.154	0.218	0.155	0.102	0.075	0.122	0.302

Source: CRELL calculations based on AES 2011 data. Notes: "()" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size.

Table A 11. Share of individuals who know a foreign language proficiently in EU Member States by labour status (AES 2011)

	Labour status		
COUNTRY	**Employed**	**Unemployed**	**Inactive**
AT	0.252	0.202	0.182
BE	0.199	0.157	0.112
BG	0.112	(0.046)	(0.048)
CY	0.379	0.237	0.151
CZ	0.129	(0.090)	0.079
DE	0.199	0.160	0.193
DK	0.381	0.452	0.301
EE	0.323	0.269	0.229
EL	0.149	0.120	0.076
ES	0.169	0.107	0.102
FI	0.292	(0.176)	0.218
FR	0.120	0.127	0.080
HU	0.100	(0.050)	0.052
IE	0.085	0.038	0.032
IT	0.098	0.100	0.052
LT	0.555	0.352	0.325
LU	0.735	(0.548)	0.663
LV	0.571	0.413	0.385
MT	0.554	0.358	0.361
NL	0.265	:	0.143
PL	0.104	0.052	0.037
PT	0.179	0.155	0.082
SE	0.464	0.401	0.369
SI	0.490	0.438	0.363
SK	0.319	0.316	0.234
EU average	0.178	0.126	0.113

Source: CRELL calculations based on AES 2011 data. Notes: "()" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size. While the sample size for computing IE figures is large enough, it should be pointed out that the country has a very high share of missing information on employment status (54%).

Table A 12. Share of population knowing English, French, German, Spanish and Russian in EU Member States by age group (AES 2011)

	Total population					Population 25-40					Population 41-64				
Country	English	French	German	Spanish	Russian	English	French	German	Spanish	Russian	English	French	German	Spanish	Russian
AT	76.2	14.9		4.0	(1.1)	84.4	17.4		5.1		70.7	13.2		3.3	(1.0)
BE	51.9	36.2	20.0	5.3		61.1	41.5	19.7	6.7		45.4	32.5	20.2	4.3	
BG	25.7	3.5	5.8	(1.0)	18.7	40.3	3.4	6.9	(1.5)	12.6	14.2	3.6	5.0		23.6
CY	81.8	8.2	3.4	(3.0)	(2.7)	92.8	10.0	(3.8)	(5.0)		73.8	7.0	(3.1)		(2.9)
CZ	40.4	2.6	33.4	1.4	28.0	54.4	3.2	38.7	1.9	15.7	26.0	2.1	27.8	(0.8)	40.8
DE	73.1	19.5	(1.5)	6.8	9.0	80.9	22.6	(3.6)	8.6	7.1	69.3	17.9		6.0	9.9
DK	92.7	9.8	61.9	3.2		95.9	8.3	60.8	5.1		90.9	10.6	62.6	(2.1)	
EE	66.0	1.3	17.6	(1.3)	66.7	79.9	(1.8)	19.5		58.0	52.1		15.8		75.4
EL	54.8	8.2	4.8	(1.3)		72.0	9.8	5.9	(2.6)		42.1	7.0	4.0		
ES	32.5	13.1	2.0	5.8		46.0	9.1	2.1	5.1		22.1	16.1	2.0	6.3	
FI	91.7	15.4	40.0	11.7	10.5	97.8	17.4	39.8	15.4	9.7	87.8	14.1	40.1	9.4	11.0
FR	51.0	1.6	9.2	15.1	(0.3)	60.3	1.9	9.8	19.7		43.7	1.3	8.8	11.5	
HU*	27.9	1.6	17.7	(0.5)	2.7	40.2	2.2	23.4	(0.8)	(1.2)	17.4	(1.2)	12.9		3.9
IT	48.0	23.0	5.0	4.6		62.4	24.0	5.7	6.3		37.9	22.3	4.5	3.4	
LT	42.0	3.2	13.5	(0.6)	86.2	60.9	(3.5)	15.1		78.1	27.5	3.0	12.2		92.4
LU	92.8	84.2	82.5	14.7		95.4	84.0	86.9	16.9		90.5	84.4	78.6	12.8	
LV	54.7	1.7	19.4	(0.9)	63.4	69.3	(2.3)	19.7	(1.2)	61.9	39.8	(1.2)	19.2		64.9
MT*	84.5	17.1	4.0	2.9		86.1	22.3	(5.1)	(3.9)		83.5	13.6	(3.2)	(2.2)	
NL	84.4	23.3	61.1	6.0		86.9	21.0	54.9	(6.8)		82.6	25.0	65.5	5.4	
PL	36.7	3.0	19.4	1.1	31.4	53.9	3.5	23.6	1.7	22.9	18.6	2.6	15.0	(0.5)	40.4
PT	44.3	33.1	3.2	21.7		61.5	35.1	3.8	27.3		31.0	31.5	2.7	17.3	
SE	91.6	16.7	38.9	11.6	(1.4)	93.7	15.6	38.9	13.7		90.3	17.3	39.0	10.3	
SI	75.2	5.4	50.5	5.3	4.0	86.1	4.2	54.1	8.1	(2.9)	64.6	6.4	46.9	(2.5)	5.0
SK	36.9	2.5	31.6	(1.0)	33.7	54.5	3.3	38.8	(1.7)	20.4	18.8	(1.7)	24.1		47.4
EU	53.5	13.6	12.4	6.6	8.3	63.4	13.2	14.4	8.0	6.8	46.2	13.8	11.0	5.5	9.5

Source: CRELL calculations based on AES 2011. Notes: "()" = Data lack reliability due to small sample size; ":" = data either not available or not reliable due to very small sample size.

Table A 13. Foreign language knowledge and employment status - AT

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	-0.057			
	(0.160)			
Knowing two or more FL	-0.088			
	(0.205)			
Proficient in at least one FL	0.353			
	(0.201)			
Knowing English		-0.000	0.253	-0.076
		(0.152)	(0.291)	(0.177)
Proficient in English		0.326	0.218	0.426
		(0.212)	(0.317)	(0.289)
Knowing French		-0.164	-0.217	-0.120
		(0.195)	(0.328)	(0.245)
Knowing Spanish		0.075	0.506	-0.231
		(0.353)	(0.563)	(0.464)
Observations	3249	3249	1262	1987

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 14. Foreign language knowledge and employment status - BE

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.018			
	(0.171)			
Knowing two or more FL	0.445**			
	(0.148)			
Proficient in at least one FL	0.055			
	(0.203)			
Knowing English		0.191	0.159	0.199
		(0.147)	(0.254)	(0.180)
Proficient in English		0.128	0.268	0.097
		(0.237)	(0.366)	(0.317)
Knowing German		0.261	0.244	0.288
		(0.185)	(0.323)	(0.222)
Knowing Spanish		-0.359	-0.556	-0.233
		(0.262)	(0.429)	(0.323)
Observations	3976	3976	1411	2565

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 15. Foreign language knowledge and employment status - BG

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.108			
	(0.098)			
Knowing two or more FL	0.111			
	(0.145)			
Proficient in at least one FL	0.148			
	(0.182)			
Knowing English		0.148	0.235	0.058
		(0.120)	(0.149)	(0.220)
Proficient in English		0.144	0.102	0.503
		(0.246)	(0.283)	(0.558)
Knowing French		0.054	-0.009	0.129
		(0.244)	(0.357)	(0.340)
Knowing German		-0.245	-0.168	-0.361
		(0.184)	(0.259)	(0.257)
Knowing Russian		0.282*	0.317	0.222
		(0.116)	(0.199)	(0.144)
Observations	4555	4555	1892	2663

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 16. Foreign language knowledge and employment status - CY

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.438*			
	(0.202)			
Knowing two or more FL	-0.082			
	(0.267)			
Proficient in at least one FL	0.889***			
	(0.205)			
Knowing English		0.410*	0.221	0.458*
		(0.193)	(0.443)	(0.215)
Proficient in English		0.769***	0.473	1.055***
		(0.204)	(0.310)	(0.281)
Knowing French		-0.230	-0.071	-0.376
		(0.290)	(0.472)	(0.377)
Knowing German		0.892	0.735	1.042
		(0.561)	(0.765)	(0.849)
Observations	1652	1652	661	991

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 17. Foreign language knowledge and employment status - CZ

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.245*			
	(0.106)			
Knowing two or more FL	0.208			
	(0.124)			
Proficient in at least one FL	-0.001			
	(0.153)			
Knowing English		0.015	-0.024	0.488*
		(0.100)	(0.124)	(0.241)
Proficient in English		0.178	0.241	0.039
		(0.183)	(0.203)	(0.614)
Knowing French		-0.256	-0.268	0.068
		(0.254)	(0.288)	(0.639)
Knowing German		0.013	-0.092	0.437*
		(0.091)	(0.113)	(0.195)
Knowing Spanish		-0.028	-0.208	0.000
		(0.339)	(0.371)	(.)
Knowing Russian		0.186	0.031	0.081
		(0.109)	(0.158)	(0.152)
Observations	6227	6227	2860	3339

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 18. Foreign language knowledge and employment status - DE

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.205			
	(0.115)			
Knowing two or more FL	0.238			
	(0.129)			
Proficient in at least one FL	0.054			
	(0.161)			
Knowing English		0.292**	-0.006	0.405**
		(0.105)	(0.198)	(0.125)
Proficient in English		0.180	-0.152	0.533*
		(0.184)	(0.279)	(0.262)
Knowing French		-0.187	0.093	-0.367*
		(0.131)	(0.217)	(0.167)
Knowing Spanish		0.063	0.039	0.087
		(0.202)	(0.340)	(0.261)
Knowing Russian		0.211	0.465	0.195
		(0.155)	(0.336)	(0.175)
Observations	4797	4797	1550	3247

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 19. Foreign language knowledge and employment status - DK

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.604			
	(0.366)			
Knowing two or more FL	0.747*			
	(0.358)			
Proficient in at least one FL	-0.362			
	(0.188)			
Knowing English		0.468	0.671	0.358
		(0.311)	(0.488)	(0.376)
Proficient in English		-0.304	-0.467	-0.209
		(0.196)	(0.268)	(0.295)
Knowing French		-0.279	-0.368	-0.264
		(0.280)	(0.397)	(0.394)
Knowing German		0.381*	0.187	0.519*
		(0.173)	(0.241)	(0.242)
Knowing Spanish		0.211	0.109	0.572
		(0.408)	(0.446)	(1.063)
Observations	2806	2806	1364	1442

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 20. Foreign language knowledge and employment status - EE

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.606**			
	(0.229)			
Knowing two or more FL	0.887***			
	(0.213)			
Proficient in at least one FL	-0.191			
	(0.160)			
Knowing English		0.253	0.089	0.410
		(0.157)	(0.243)	(0.223)
Proficient in English		0.236	0.201	0.775
		(0.235)	(0.255)	(0.783)
Knowing German		0.235	0.022	0.633
		(0.185)	(0.230)	(0.340)
Knowing Russian		0.245	0.340	0.085
		(0.141)	(0.180)	(0.241)
Observations	2533	2533	1238	1295

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 21. Foreign language knowledge and employment status - EL

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.305**			
	(0.111)			
Knowing two or more FL	0.314			
	(0.205)			
Proficient in at least one FL	0.148			
	(0.187)			
Knowing English		0.255*	0.076	0.393*
		(0.111)	(0.163)	(0.157)
Proficient in English		0.203	0.529*	-0.199
		(0.204)	(0.242)	(0.361)
Knowing French		0.086	-0.067	0.160
		(0.230)	(0.287)	(0.380)
Knowing German		-0.249	-0.237	-0.194
		(0.219)	(0.280)	(0.356)
Observations	4407	4407	1637	2770

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 22. Foreign language knowledge and employment status - ES

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.232***			
	(0.058)			
Knowing two or more FL	0.211*			
	(0.085)			
Proficient in at least one FL	0.177*			
	(0.087)			
Knowing English		0.129*	0.102	0.192*
		(0.063)	(0.088)	(0.092)
Proficient in English		0.474**	0.473*	0.548*
		(0.148)	(0.185)	(0.246)
Knowing French		0.023	-0.177	0.094
		(0.076)	(0.133)	(0.095)
Knowing German		-0.190	-0.368	-0.033
		(0.168)	(0.249)	(0.219)
Observations	12509	12509	4963	7546

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 23. Foreign language knowledge and employment status - FI

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.446			
	(0.255)			
Knowing two or more FL	0.560*			
	(0.219)			
Proficient in at least one FL	0.378*			
	(0.175)			
Knowing English		0.472*	-0.099	0.562*
		(0.203)	(0.588)	(0.232)
Proficient in English		0.488*	0.738**	0.053
		(0.191)	(0.251)	(0.297)
Knowing French		-0.150	-0.269	0.049
		(0.202)	(0.285)	(0.284)
Knowing German		0.172	0.128	0.103
		(0.149)	(0.218)	(0.208)
Knowing Spanish		-0.283	-0.359	-0.149
		(0.206)	(0.274)	(0.318)
Knowing Russian		-0.130	0.022	-0.351
		(0.210)	(0.327)	(0.269)
Observations	2898	2898	1025	1873

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 24. Foreign language knowledge and employment status - FR

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.209*			
	(0.090)			
Knowing two or more FL	0.064			
	(0.109)			
Proficient in at least one FL	-0.192			
	(0.148)			
Knowing English		0.154	0.220	0.118
		(0.085)	(0.135)	(0.109)
Proficient in English		-0.319	-0.131	-0.574*
		(0.188)	(0.267)	(0.262)
Knowing German		0.038	0.204	-0.091
		(0.144)	(0.238)	(0.182)
Knowing Spanish		-0.059	-0.001	-0.118
		(0.114)	(0.157)	(0.167)
Observations	9102	9102	3751	5351

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 25. Foreign language knowledge and employment status - HU

	Base model	Total pop.	Age group 25-39	Age group 40-64
Employment				
Knowing one FL	0.107			
	(0.120)			
Knowing two or more FL	0.318			
	(0.221)			
Proficient in at least one FL	-0.230			
	(0.233)			
Knowing English		0.146	0.169	0.114
		(0.144)	(0.176)	(0.252)
Proficient in English		0.233	0.494	-0.489
		(0.296)	(0.328)	(0.591)
Knowing French		-0.222	-0.070	-0.313
		(0.581)	(0.652)	(0.937)
Knowing German		0.165	0.225	0.118
		(0.140)	(0.185)	(0.212)
Knowing Russian		0.177	-0.522	0.591
		(0.375)	(0.590)	(0.456)
Observations	5164	5164	2212	2952

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 26. Foreign language knowledge and employment status - IT

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.361***			
	(0.085)			
Knowing two or more FL	0.299**			
	(0.107)			
Proficient in at least one FL	0.120			
	(0.167)			
Knowing English		0.340***	0.251	0.455***
		(0.082)	(0.131)	(0.107)
Proficient in English		-0.019	0.102	-0.124
		(0.203)	(0.256)	(0.333)
Knowing French		-0.060	-0.241	0.064
		(0.083)	(0.128)	(0.108)
Knowing German		0.037	0.002	0.064
		(0.156)	(0.224)	(0.215)
Knowing Spanish		0.133	0.094	0.191
		(0.193)	(0.245)	(0.291)
Observations	6915	6915	2522	4393

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 27. Foreign language knowledge and employment status - LT

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.219			
	(0.317)			
Knowing two or more FL	0.587			
	(0.321)			
Proficient in at least one FL	0.478***			
	(0.100)			
Knowing English		0.458***	0.345*	0.542**
		(0.121)	(0.172)	(0.175)
Proficient in English		0.371	0.373	0.744
		(0.259)	(0.288)	(0.639)
Knowing French		0.014	-0.452	0.715
		(0.273)	(0.363)	(0.474)
Knowing German		0.153	-0.048	0.312
		(0.149)	(0.222)	(0.201)
Knowing Russian		0.289*	0.273	0.403
		(0.136)	(0.176)	(0.211)
Observations	3378	3378	1267	2111

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 28. Foreign language knowledge and employment status - LU[41]

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Proficient in at least one FL	0.262			
	(0.182)			
Knowing English		0.675**	0.122	0.898**
		(0.260)	(0.688)	(0.307)
Proficient in English		0.194	0.124	0.355
		(0.315)	(0.579)	(0.365)
Knowing French		0.017	-0.077	0.094
		(0.232)	(0.453)	(0.279)
Knowing German		0.082	0.213	0.028
		(0.206)	(0.435)	(0.235)
Knowing Spanish		0.398	0.595	0.289
		(0.253)	(0.477)	(0.307)
Observations	2118	2118	884	1234

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

[41] Controls for number of languages known were not included in the model for LU since most of the population speaks many foreign languages, so the estimates would not converge because of small sample size in some groups.

Table A 29. Foreign language knowledge and employment status - LV

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.032			
	(0.234)			
Knowing two or more FL	0.347			
	(0.241)			
Proficient in at least one FL	0.312**			
	(0.099)			
Knowing English		0.253*	0.264	0.201
		(0.114)	(0.167)	(0.164)
Proficient in English		-0.066	-0.164	0.430
		(0.193)	(0.217)	(0.453)
Knowing French		-0.422	-0.560	0.120
		(0.466)	(0.547)	(0.773)
Knowing German		0.167	0.175	0.173
		(0.127)	(0.178)	(0.184)
Knowing Russian		0.423***	0.345*	0.506***
		(0.097)	(0.138)	(0.138)
Observations	3894	3894	1962	1932

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 30. Foreign language knowledge and employment status - MT

	Base model	Total pop.	Age group 25-39	Age group 40-64
Employment				
Knowing one FL	0.497*			
	(0.215)			
Knowing two or more FL	0.690***			
	(0.208)			
Proficient in at least one FL	0.405**			
	(0.135)			
Knowing English		0.400*	0.487	0.381
		(0.174)	(0.297)	(0.215)
Proficient in English		0.345*	0.295	0.380*
		(0.135)	(0.225)	(0.173)
Knowing French		0.479*	0.613*	0.389
		(0.191)	(0.287)	(0.269)
Knowing German		-0.000	-0.477	0.455
		(0.342)	(0.438)	(0.536)
Knowing Spanish		0.377	-0.333	1.122
		(0.477)	(0.605)	(0.678)
Observations	2449	2449	973	1476

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 31. Foreign language knowledge and employment status - NL

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.489*			
	(0.203)			
Knowing two or more FL	0.593**			
	(0.182)			
Proficient in at least one FL	0.225			
	(0.214)			
Knowing English		0.500**	0.558	0.437*
		(0.185)	(0.370)	(0.207)
Proficient in English		0.437	1.164*	0.116
		(0.248)	(0.501)	(0.290)
Knowing French		-0.179	-0.567	-0.061
		(0.224)	(0.485)	(0.228)
Knowing German		0.166	0.163	0.193
		(0.167)	(0.337)	(0.192)
Knowing Spanish		-0.213	-1.060	0.117
		(0.383)	(0.596)	(0.440)
Observations	2530	2530	733	1797

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 32. Foreign language knowledge and employment status - PL

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.215***			
	(0.051)			
Knowing two or more FL	0.199**			
	(0.070)			
Proficient in at least one FL	0.236*			
	(0.113)			
Knowing English		0.104	0.056	0.237*
		(0.061)	(0.077)	(0.115)
Proficient in English		0.238	0.324*	-0.095
		(0.151)	(0.162)	(0.446)
Knowing French		-0.084	-0.027	-0.206
		(0.169)	(0.206)	(0.311)
Knowing German		0.097	0.177*	-0.044
		(0.063)	(0.082)	(0.098)
Knowing Spanish		0.303	0.327	0.221
		(0.253)	(0.296)	(0.512)
Knowing Russian		0.159**	0.039	0.205**
		(0.050)	(0.080)	(0.064)
Observations	17683	17683	7924	9759

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 33. Foreign language knowledge and employment status - PT

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.352***			
	(0.075)			
Knowing two or more FL	0.356***			
	(0.091)			
Proficient in at least one FL	-0.157			
	(0.105)			
Knowing English		0.380***	0.369**	0.337***
		(0.079)	(0.121)	(0.102)
Proficient in English		-0.058	-0.036	0.077
		(0.140)	(0.177)	(0.228)
Knowing French		0.130	0.053	0.173
		(0.074)	(0.122)	(0.090)
Knowing German		-0.342	-0.484	-0.195
		(0.175)	(0.252)	(0.241)
Knowing Spanish		-0.038	-0.097	0.042
		(0.085)	(0.128)	(0.110)
Observations	9001	9001	3092	5909

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 34. Foreign language knowledge and employment status - SE

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.257			
	(0.267)			
Knowing two or more FL	0.252			
	(0.271)			
Proficient in at least one FL	0.218			
	(0.189)			
Knowing English		0.379	0.988*	0.118
		(0.251)	(0.417)	(0.313)
Proficient in English		0.129	0.244	0.024
		(0.199)	(0.309)	(0.267)
Knowing French		0.298	-0.059	0.498
		(0.273)	(0.456)	(0.340)
Knowing German		0.072	-0.055	0.131
		(0.179)	(0.295)	(0.224)
Knowing Spanish		0.112	0.478	-0.093
		(0.271)	(0.483)	(0.337)
Observations	2284	2284	949	1335

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 35. Foreign language knowledge and employment status - SI

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	0.258			
	(0.252)			
Knowing two or more FL	0.449*			
	(0.217)			
Proficient in at least one FL	0.096			
	(0.129)			
Knowing English		0.303*	-0.174	0.359
		(0.153)	(0.315)	(0.191)
Proficient in English		-0.016	-0.029	0.165
		(0.171)	(0.233)	(0.269)
Knowing French		-0.458	-0.629	-0.391
		(0.257)	(0.398)	(0.329)
Knowing German		-0.042	-0.133	0.048
		(0.125)	(0.201)	(0.163)
Knowing Spanish		-0.451	-0.324	-0.500
		(0.267)	(0.333)	(0.475)
Knowing Russian		-0.556*	-0.371	-0.704*
		(0.258)	(0.514)	(0.306)
Observations	2851	2851	1367	1484

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

Table A 36. Foreign language knowledge and employment status - SK

	Base model	Total pop.	Age group 25-40	Age group 41-64
Employment				
Knowing one FL	-0.044			
	(0.176)			
Knowing two or more FL	0.205			
	(0.176)			
Proficient in at least one FL	-0.106			
	(0.126)			
Knowing English		0.223	0.106	0.883*
		(0.133)	(0.160)	(0.383)
Proficient in English		-0.308	-0.317	-0.693
		(0.251)	(0.279)	(0.864)
Knowing French		0.028	0.190	-0.371
		(0.349)	(0.414)	(0.768)
Knowing German		0.127	-0.059	0.620*
		(0.120)	(0.149)	(0.260)
Knowing Russian		0.185	-0.043	0.201
		(0.133)	(0.186)	(0.188)
Observations	3619	3619	1882	1737

Source: CRELL calculations based on AES 2011. The reference category is no knowledge of foreign languages (FL). Controls for gender, age group, education level, parental education level, marital status not reported. All figures are weighted.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Standard errors in parentheses.

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Abstract

This report reviews evidence regarding the foreign language competences of European citizens and presents new findings about the relationship between foreign language skills and the likelihood of being in employment. In view of providing research evidence that can inform European Union (EU) policy initiatives, it reviews studies that frame knowledge of languages as a form of human capital, presents descriptive statistics about language knowledge and investigates whether this knowledge is related to employment chances. Using data from the Adult Education Survey (AES 2011) the analyses show how many languages adults know and their proficiency level in the two best known languages in the 25 Member States. To understand the relationship between language knowledge and employment status, for Member States was used to examine whether skills in foreign languages increase the employment rates of 25-64 year-old adults. In addition, the analyses capture different relationships between language skills and employment for specific languages - English, French, German, Russian and Spanish – and age groups (25-40 and 41-64). Findings indicate that knowing foreign languages and being proficient in them is an important factor for being employed. This is the case in 17 Member States, although different patterns emerge in different Member States in relation to specific languages, proficiency levels and age groups.

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