



HUMBOLDT-UNIVERSITÄT ZU BERLIN

Foreign Language skills and employment status: Evidence from Germany, Italy and Spain

MICHELE GAZZOLA and NANNETTE SWED

WORKING PAPER No. 19-7

Updated: 2019-02-19

REAL

Research group “Economics and language” – Berlin



Foreign Language skills and employment status: Evidence from Germany, Italy and Spain*

MICHELE GAZZOLA[†] and NANNETTE SWED[‡]

Abstract

This paper examines the relationship between skills in English and French as foreign languages and the probability of being unemployed in Germany, Italy and Spain using data from the Adult Education Survey (Eurostat, 2013). Results reveal that skills in English reduce the probability of being unemployed for men in the three countries by 2.6 to 4.7 percent, and by 5.5 percent for women in Germany. Foreign language skills reduce the probability of being unemployed for women in Germany by about 5.8 percent. Results also reveal that the market rewards differently the levels of language competence: for men, a fair level of ability in English is surprisingly rewarded more than an intermediate level. A proficient level of English is rewarded much more than a fair level of knowledge in Germany and Spain, but not in Italy. Differences in the structure of the economy of these three countries could explain this divergence. No clear pattern could be found for women.

*Part of this work was carried out in the Research group “Economics and language” in Berlin, which received funding from the European Union’s Seventh Framework Program (Project MIME – grant agreement 613344). This support is gratefully acknowledged.

[†]Ulster University
Research group “Economics and language” (REAL), Berlin
Humboldt-Universität zu Berlin
Email: *m.gazzola@ulster.ac.uk*

[‡]Research group “Economics and language” (REAL), Berlin
Email: *nannette.swed@gmail.com*

1. Introduction

During the last decade, the official EU discourse about foreign (or second) language learning and teaching has gradually changed. While learning foreign languages was traditionally associated with openness to other European cultures, nowadays the EU discourse on multilingualism focuses on the relationships between foreign language skills and economic variables such as economic growth, competitiveness, mobility of labour, and employability. A working paper published in 2012 by the European Commission illustrates this trend:

Europe's vision for 2020 is to become a smart, sustainable and inclusive economy. Therefore, improving the outcomes of education and training and investing in skills in general—and language skills in particular—are important prerequisites to achieve the EU goal of increasing growth, creating jobs, promoting employability and increasing competitiveness. The ambition is to achieve better functioning of EU labour markets, to provide the right skills for the right jobs and to improve the quality of work and working conditions. In this context, *foreign language proficiency is one of the main determinants of learning and professional mobility, as well as of domestic and international employability*. Poor language skills thus constitute a major obstacle to free movement of workers and to the international competitiveness of EU enterprises. [...] it is clear, however, that the benefits of improved language learning go well beyond the immediate economic advantages, encompassing a range of cultural, cognitive, social, civic, academic and security aspects (European Commission 2012: 4, italics added).

The EU therefore does not intend to neglect the cultural or cognitive aspects of language learning; quite simply the scope of EU language policy was broadened. This change has gradually emerged throughout the last decade in different important policy documents such as the *Action Plan 2004-2006* (European Commission 2003), the communication “A new strategic framework for multilingualism” (European Commission 2005), and the communication “Multilingualism: an asset for Europe and a shared commitment” (European Commission 2008). The change in the official discourse on multilingualism must be linked to two factors. The first one was strategic. Language policy, and in particular foreign language teaching, is viewed as an element contributing to the achievement of the general socio-economic objectives of the EU defined in the *Lisbon Agenda 2000-2010* (Krzyżanowski and Wodak 2011), and to the achievement of the goals of the *Europe 2020 Agenda*.¹ The second factor was reactive. After the outbreak of the financial crisis in 2008 and the economic downturn in 2009, the unemployment rate in the EU increased and reached a peak in 2011. It was below 7 percent in 2008, 10.9 percent in 2011, and then it decreased to 7.6 percent in 2017. Large differences among countries exist. For example, in 2011, the unemployment rate was 5.8 percent in Germany, 8.4 percent in Italy, and 21.4 percent in Spain. The youth unemployment rate is much

¹ The Lisbon Agenda was a plan developed by the European Commission aimed at making the EU “the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion by 2010”. It was followed by Europe 2020, a 10-year strategy aiming at “smart, sustainable, inclusive growth” with greater coordination of national and European policy.

higher than the average unemployment rate. The economic crisis severely hit the young. In 2008, the youth unemployment rate started to grow quickly peaking in 23.8 percent at the beginning of 2013, before receding to 16.8 percent at the end of 2017.

Again this backdrop, foreign language skills are viewed as a component of Europeans' human capital that can generate benefits in the domestic labour market, such as higher wages, or better employment opportunities. Reducing unemployment also matters for equity, because employment is one of the dimensions of social inclusion. Although the European Commission, as shown above, claims that "foreign language proficiency is one of the main determinants of learning and professional mobility, as well as of domestic and international employability", there is little evidence that this is the case. Little is known about the relationship between foreign language skills on employment, let alone on employability. While the unemployment rate is clearly defined, the definition of what employability means is far from clear and many definitions coexist (McQuaid and Lindsay 2005). The official definition used by the European Commission is the "ability to gain initial employment, to maintain employment, and to be able to move around within the labour market", but it is not clear which indicators should be used to measure it. For this reason the empirical studies available focus just on one dimension of employability, that is, the employment status.

The majority of existing quantitative studies on the effects of language skills on labour market outcomes focus actually on earning differentials accruing to multilingual people (for recent overviews, see Gazzola, Grin and Wickström 2016, Ispording 2015, Zhang and Grenier 2013, Chiswick and Miller 2007), but very few papers explicitly deal with the question of the impact of language skills on employment. These contributions usually study the relationship between employment opportunities of immigrants and the development of good skills in the official language of the host country (Zorlu and Hartog 2018, Yao and van Ours 2015, Ispording and Otten 2014, Chiswick and Miller 2014, Maxwell 2010, Aldashev, Gernandt and Thomsen 2009, Dustmann and Fabbri 2003, Leslie and Lindley 2001), or the effect of acquiring proficiency in a locally official language, such Catalan for people who move to Catalonia (Rendon 2007), or in an official language spoken by a minority of the population such as English in South Africa (Cornwell and Inder 2008). Grin *et al.* (2009, 2010) study the relationship between second language skills and employment in Switzerland where such languages are not sociolinguistically dominant (e.g. English or French in the German-speaking part of the country). They show that if the average wage increases by 5 percent, the demand for monolingual workers decreases by 8.7 percent, but the demand for multilingual workers decreases just by 3.7 percent. Duncan and Mavisakalyan (2015) show that in some former Republics of the Soviet Union (i.e. Armenia, Azerbaijan and Georgia) skills in the Russian language increase probability of employment by about 6 (males) and 9 (females) percentage points. Lindermann and Kogan (2013) study the role of language competency for labour market entry among youths in Estonia and Ukraine. Results show that in Estonia knowledge of Estonian is important to the Russian-speaking minority in order to gain a faster access to the employment, whereas this is not the case in Ukraine.

The relationship between skills in foreign languages and unemployment in EU countries, nevertheless, remained underexplored. This is surprising because the majority of employers in the EU — except in Ireland, the UK and France — rated “very important” (33 percent) or “rather important” (34 percent) foreign languages skills when recruiting higher education graduates in their company, according to an Eurobarometer report (European Commission 2010). Lack of sufficient foreign language skills of labour supply has been reported in various surveys or reports at the national level, for example, in Italy (Ministry of Labour 2006), Austria (Tritscher-Archan 2008), Sweden, Denmark, France and Germany (Bel Habib 2011), and the United Kingdom (Mulkerne and Graham 2011).

To our knowledge there are only three cross-national studies on this topic. The first two studies use data from vacancy notices. Beadle *et al.* (2015) reports the results of 845 interviews with employers and employer organisations on the use and utility of foreign languages, the review of 3632 online vacancy notices, and interviews with 522 employers. Results show that a significant percentage of employers require an advanced level of foreign language skills. Fabo, Beblavy and Lenaerts (2017) investigate the economic importance of foreign language skills in the Visegrad group of countries (i.e. Czech Republic, Hungary, Poland, and Slovakia) using data obtained from key online vacancy boards and from an online wage survey. The results indicate that in the Visegrad region skills in English and to a lesser extent German are highly demanded. The third study (Araújo *et al.* 2015) uses logistic regressions and data from the Adult Education Survey published in 2013 by Eurostat to explore the relationship between knowledge of one or more foreign languages in general and the employment status of adult Europeans. The study reports a positive relationship between employment and knowledge of English in Germany, Greece, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Portugal and Slovenia. In Cyprus, Spain, Finland and Malta English proficiency (that is, very good language skills) is associated with a higher probability of being employed. People knowing at least some French are more likely to be employed in Malta, those who know German are more likely to be employed in Denmark, while Russian is associated with a higher probability of being employed in Bulgaria, Latvia, Lithuania and Poland. This study, nevertheless, has different shortcomings. The authors provide no estimate of the magnitude of these effects. In addition, the relationship between the level of proficiency and employment is analysed only for English. Finally, gender differences are not explored in detail.

This paper is to deepen the research of Araújo *et al.* (2015). Using a different and more detailed specification model, we provide estimates of the marginal effect of foreign language skills on the probability of being unemployed and this for men and women separately. We focus on in the domestic labour market of three EU countries, namely Germany, Italy and Spain. We select these countries for several reasons that are explained in Section 3. Although the data available do not allow to establish a clear causal relationship between foreign language skills and the probability of being unemployed, the comparison between three countries that share some common features provides useful results. This article is organised as follows: Section 1 presents the dataset and our estimation strategy. Section 2 provides an overview of the linguistic skills of EU citizens in Germany, Italy and Spain, and it illustrates the character-

istics of the sample. In Section 4, we present the results of two econometric models. Section 5 critically discusses our specification model as well as the results.

2. Data and Estimation Strategy

This article employs data from the second edition of the *Adult Education Survey* (AES-2011). Data were collected by Eurostat in 2011 and published at the end of 2013. The survey covers the current 28 Member States but Croatia, and some countries belonging to the European Free Trade Association (EFTA) such as Norway and Switzerland. The AES contains information on EU residents' native language(s) and on their knowledge of foreign languages. Data on languages were collected with respect to 49 languages, and skills in foreign languages were self-assessed by interviewees on a formally defined scale of competence, that is:

- No knowledge
- *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”).

The survey contains different information on the socio-economic status of respondents, including age, gender, family status (i.e. marital and parental status), level of education completed, and the current labour status of the respondent (employed/unemployed). Unfortunately, we do not have adequate data on the respondents' income.² In order to study the effect of language skills on the probability of being unemployed in a selected number of European countries, two different models are used. In the first model, we treat language skill in a given language as a single dichotomous variable. In other words, we estimate on the effect of having at least some knowledge of a given foreign language on the probability of being unemployed, all other things being equal. In the second model, we introduce diversity in language ability using the levels defined above. The first empirical strategy illustrates whether foreign language skills in general are positively correlated with the employment status on individuals. The second empirical strategy points out which level of foreign language ability matters more in curbing the probability of being unemployed. Since foreign language proficiency alone is not expected to explain perfectly the employment status we define a set of socio-economic controls. Those are the same in both models. As standard in labour market analyses, we control for a non-linear age effect, educational background, family situation and regional effects. (See e.g. Aldashev, Gernandt and Thomsen 2009, Leslie and Lindley 2001, Rendon 2007 for similar specifications in comparable research questions). The two models (or equations) are defined as follows:

$$\text{Model 1: } \quad \text{Prob}(\text{unemp}_i) = \alpha_0 + \sum_{j=1}^{10} \beta_j X_{ji} + \gamma_1 \text{langused}A_i + \gamma_2 \text{langused}B_i + \varepsilon_i$$

² The variable income in the AES is defined as the net monthly income of the household including social benefits, and it is defined in deciles.

$$\text{Model 2: } \text{Prob}(\text{unemp}_i) = \alpha_0 + \sum_{j=1}^{10} \beta_j X_{ji} + \gamma_1 \text{klangA2}_i + \gamma_2 \text{klangA3}_i + \gamma_3 \text{klangA4}_i + \gamma_4 \text{klangB2}_i + \gamma_5 \text{klangB3}_i + \gamma_6 \text{klangB4}_i + \varepsilon_i$$

where $\text{unemp} = \{0,1\}$. We model the probability of being unemployed with a Probit 1 function. Our vector of 10 controls X (or “Xlist”) are specified as the following:

- *Age*= number of years of the respondent, from 25 to 64.
- *Age*²=*age* squared. We also control for non-linear age effects by including the square of *age*. Note that we cannot explicitly control for work experience because this variable is not constructible from the data.³
- *Married*= dummy variable indicating whether the respondent is married (including registered partnerships). Not being married includes widowed not remarried, legally separated and not remarried, divorced, and singles.
- *Child*= dummy variable indicating whether the respondent has at least a child aged less than 25 living in the same city.
- *Urb1*= dummy variable indicating whether the respondent lives in a densely populated area.
- *Urb2*= dummy variable indicating whether the respondent lives in an intermediate populated area. The reference category hence is thinly populated area (*Urb3*). We control for the degree of urbanisation as a result of a lack of information on the geographical region in which a respondent lives. This is the only control available for regional fixed effects.⁴
- *ISCED2*= dummy variable indicating that the highest level of education successfully completed by the respondent is equal to ISCED2.⁵ A level ISCED2 corresponds to lower secondary education. The reference category, therefore, is a primary education level or below.
- *ISCED3*, *ISCED4*, and *ISCED5*= dummy variables indicating that the highest level of education successfully completed by the respondent is, respectively, equal to ISCED3

³ Work experience is usually approximated by the age minus years of schooling minus 6 years of infancy. Note however, that this measure would assume that all individuals work without breaks years after infancy and schooling. Since we want to estimate the relationship between individuals’ language skills and their employment status this approximation is likely to be harmful to our specification.

⁴ Information on the geographical regions would be a valuable source for exploring variation in unemployment because it differs across regions. With this piece of information, which is not available in the AES, one could analyse whether language skills are rewarded differently in regions close to national borders.

⁵ ISCED stands for ‘International Standard Classification of Education’, a system developed by UNESCO to facilitate the comparison between the educational systems of different countries.

(upper secondary education), ISCED4 (post-secondary non-tertiary level of education), and ISCED5 (tertiary level of education).⁶

The two models differ in the linguistic variables examined. In Model 1, there are only two linguistic variables that capture the general effect of linguistic skills on the probability of being unemployed. Language *A* and language *B* are the two most frequently known foreign languages in a given country, for example, French and English in Germany. *LangusedA* (respectively *LangusedB*) is dummy variable indicating whether the respondent declares to be able to use language *A* (respectively *B*) as a foreign language.

The reference person in Model 1 does not report any foreign language skill. Model 2 contains six linguistic variables denoting the level of proficiency in the two foreign languages known by respondents. Note that there is a strong correlation between schooling levels and foreign language proficiency. The resulting multicollinearity affects the standard errors of the estimates. Statistical significance is not assessed correctly, but parameters are still estimated consistently. Disregarding heterogeneity in schooling would however introduce a bias into our parameter estimates since this unobserved heterogeneity would then be taken up by the error term of the equation. *klangA2* (respectively, *klangA3* and *klangA4*) is a dummy variable indicating whether the respondent declares to speak language *A* as a foreign language at a “fair” level (respectively, “good” and “proficient” level), as defined above. The variables *klangB2*, *klangB3*, *klangB4* refer to language *B*.

3. Overview, Descriptive Statistics and Sample Characteristics

We focus on three EU countries, namely, Germany, and Italy and Spain, three of the most populated Member States of the Union. We focus on these countries for several reasons. First, the number of statistical observations is larger than for other countries included in the AES. Second, they have just one official language (regional languages in Spain are official just in some autonomous regions, e.g. Catalonia). Third, the situation of their labour market is very different. The unemployment rate in Germany is much lower than the EU average, close to the average in Italy and much higher than the average in Spain. Finally, in these three countries, English and French are the most commonly spoken foreign languages, as shown in Table 1, which facilitates the comparison. Results refer to percentages for the whole population aged 25-64; they provide an overview of the most often spoken foreign languages by citizens in the three countries (immigrants and EU citizens living abroad are excluded). Note that German in Germany, and Spanish in Spain are spoken as “foreign languages” by a significant share of nationals, usually speakers of minority languages or foreign people who acquired local citizenship.

⁶ In the specification model of Araújo *et al.* (2015), the list of controls does not include proxies for work experience and the presence of children. Both variables capturing age and education effects are less specific than ours because they are defined in three simple macro-classes instead of five. The degree of urbanisation is not taken into account.

Insert Table 1 here

Table 2 illustrates the level of fluency in English and French in the three countries. The AES reports the levels of competence only for the first and the second foreign languages that the respondents declare to know best. For this reason, in the second model we lose some observations because we need to drop observations for respondents who speak language *A* and/or language *B* as third and fourth foreign language in order to avoid mixing them up with the ones who do not speak such languages at all.⁷

Table 2 reveals that only a minority of adult residents in the three countries analysed declare to master English or French at a proficient level. Proficiency in English is more common than in French.

Insert Table 2 here

We select two different samples. The first sample is made up of men aged 25-64 living in private households in Germany, Italy and Spain who are citizens and residents in their home country, do not speak English or French as mother tongue, and do not speak other foreign languages other than English and French (this is to exclude the effect of other languages on the employment status). We also drop individuals working part-time. Since their labour market behaviour could follow different patterns that individuals working full time summarising those potentially heterogeneous groups in one labour market status could result in a loss of precision. Hence, in this article employment status is defined as full employment.⁸ In the AES this includes unpaid work for a family business or holding, and an apprenticeship or paid traineeship. We exclude individuals from our working sample that are currently not available for the labour market.⁹ The second sample shares the same characteristics of the first sample

⁷ In the AES, respondents could list up to seven languages, ranked by skill level, but data on the level of fluency (i.e. fair, good, proficient) were collected only for the first and second foreign language. Respondents declaring to know more than two foreign languages, nevertheless, are a tiny minority, and it is unlikely that also the third and fourth foreign language are spoken at a proficient level. For example, in Germany, 65.1 percent of respondents speak English as a first or second foreign language. This means that only 0.7 percent of respondents speak it as a third or fourth foreign language. In Italy, this percentage is 0.5 percent, and 0.9 percent in Spain.

⁸ In the study of Araújo *et al.* (2015: 66), the variable “employed” include those carrying out part-time jobs. Further, inactive people (excluding those in education, retired, disabled, in military service and those fulfilling domestic tasks) are included in the definition of “unemployed”.

⁹ Those include (i) pupil, students, people attending further training, or carrying out unpaid work experience; (ii) people in retirement or early retirement or people who gave up business; (iii) permanently disabled; (iv) people in compulsory military service; (v) respondents fulfilling domestic tasks; (vi) other inactive persons.

but gender: it includes only female citizens working full-time and living in their home country.

Table 3 illustrates the descriptive statistics for the sample used in Model 1. The variable *langusedA* in Model 1 corresponds to *langused_EN* (for English) and the variable *langusedB* corresponds to *langused_FR* (for French).

Insert Table 3 here

The percentage of unemployed men in the sample is 9.3 percent in Germany, 10.7 percent in Italy and 21.8 percent in Spain. The percentages of respondents declaring to know English and/or French differ from those presented in Table 1 because we want to report sample characteristics (thus, statistics in Table 3, Table 4, Table 5 and Table 6 are not weighted).

Table 4 illustrates the descriptive statistics the sample used in Model 2. In Table 4, the variables *klangA2*, *klangA3*, *klangA4* in Model 2 correspond, respectively, to *kenglish2*, *kenglish3*, *kenglish4* (for English) and the variables *klangB2*, *klangB3*, and *klangB4* correspond, respectively, to *kfrench2*, *kfrench3*, and *kfrench4* (for French). The variables *kenglish1* and *kfrench1* indicate respondents who do not know English or French at all.

Insert Table 4 here

Table 5 and Table 6 present the descriptive statistics for our second sample (women). The percentage of unemployed women in the three countries is larger than the percentage of unemployed men. Women in the sample tend to be married less frequently than men. In Italy and Germany, women in the sample are less likely to have children than male respondents. We do not observe important differences among men and women as regards the degree of urbanisation. In Germany, there are not large differences among men and women as regards the educational level successfully completed by respondents; in Italy and Spain, women in the sample tend to be better educated than men. Women know French more often than men in the three countries, and they know English more often than men in Italy and Spain, but not in Germany.

Insert Table 5 here

Table 6 illustrates the descriptive statistics for variables used in Model 2, using the second sample. Women know French and English better than men in the three countries, with a partial exception in Germany.

Insert Table 6 here

4. Estimates

4.1 Results for men

We use probit regression to estimate Model 1 and Model 2. Table 7 presents the results of the probit regression for Model 1 for men. Marginal effects (ME) for the probit model are estimated at the mean. Estimating the marginal effects on the median would overestimate the marginal effects since it takes either 0 or 1 at the median. This translates into the following effect in our example: all educational dummies are set to 0, therefore the effect of language in the labour market is overestimated. Likewise, we decided against the AME (average marginal effects) because we use mainly binary variables. Results of the AME are more similar to the OLS case. However, AME also assumes a linear relationship whereas we use only two points at both ends of the latent distribution to evaluate the effect.

Insert Table 7 here

Almost all the control variables' estimates show the expected signs. More specifically, age is shown to have a negative and decreasing relation with unemployment. Being married and higher educational attainment is associated with a lower risk of being unemployed. The negative impact of being married on unemployment is consistent with the literature on the economic advantages linked to marriage (for example, higher wages; see Chun and Lee 2001, Pollmann-Schult 2010). The urban controls and the presence of a child show ambiguous impacts in the three countries.

In Germany, Italy and Spain, speaking English, all other things being equal, significantly decreases the probability of being unemployed. The coefficients for French, however, are not statistically significant in none of the three countries. These results are consistent with those of Araújo *et al.* (2015). We expect that our model could be improved to a large extent by including regional effects and additional sector information (see Section 5 for more discussion about possible improvements to our model).

Let us turn to the interpretation of the marginal effects. Table 4 shows that marginal effect of each variable on the probability of being unemployed in the three countries, computed at the average value of the variable concerned. The educational level successfully completed by respondents plays a more important role in explaining employment variation than language knowledge, although sometimes differences are not that large. In Germany, having successfully completed an upper secondary education level (ISCED 3) is associated with a lower probability of being unemployed of the average individual by 15.2 percent with respect to someone having completed only primary education (ISCED 1). Having at least some knowledge of English, reduces the probability of being unemployed by 3.6 percent with respect to someone who does not know it, holding all other controls constant. In Italy, all other things being equal, speaking English reduces the probability of being unemployed for the average individual by 2.6 percent, so less than in Germany. Such a gap could be explained, among other things, by differences in the labour market of the two countries, for example the importance of export industries and use of advanced technology. In Spain, the effect of linguistic skills in English on unemployment is larger than in Germany or Italy (-4.7 percent).

Given the high unemployment rate in this country, language skills seem to contribute substantially to securing a full-time job position.

Next, we check the relationship between different levels of language proficiency and the probability of being unemployed. Table 8 shows coefficient estimates of the latent model of Equation 2 together with their corresponding ME.

Insert Table 8 here

The two equations provide almost identical results as regards the impact of the *Xlist* variables on the probability of being unemployed. The coefficients for the variables *kenglish2* *kenglish3* *kenglish4* have the expected signs in the three countries. In Germany and Spain, we find a significant effect only for fair and proficient levels of language knowledge, whereas surprisingly the intermediate level does not increase the labour market value compared to the fair language knowledge. It is possible that a fair level is viewed as enough in some economic sectors, while for some position only very good language skills make a difference. In Italy, the only significant effect of language proficiency level is found for a fair knowledge of English. It may be the case that most of job activities do not require a high level of proficiency in this language. The estimated coefficients for French in the latent model are statistically insignificant. Note that in Germany we cannot report an estimate for variable *kfrench4* because we have no observations in this category. Our results are only partially consistent with those of Araújo *et al.* (2015), who find a positive and significant relationship between fluency in English and the probability of being employed only in Spain, but not in Germany. This may be due to differences in the specification model chosen that does not distinguish between men and women and between full-time and part-time employment.

The estimates of the marginal effects of the explanatory variables are computed at their mean again. If we use information on proficiency levels in both foreign languages, we find that the benefit of knowing English and/or French are rewarded very differently in Germany, Italy and Spain. Speaking English at a fair level already pays off in the three countries. All other things being equal, a fair knowledge of English decreases the probability of being unemployed by 3.2 percent in Germany, by 2.8 percent in Italy, and 5.4 percent in Spain. In addition, knowing English at a very good level strongly reduces the risk of unemployment in the case of Germany (-5.6 percent) and Spain (-7.7 percent). In Italy, the effect is less strong. The effect of speaking English at a very good level is almost as influential on the probability of being unemployed as the ISCED 4 post-secondary (not tertiary education) in Germany.

4.2 Results for women

Table 9 presents the results of the probit regression for Model 1 using the second sample, that is, women.

Insert Table 9 here

The results of the probit regression for women are in part different from those for men. As for men, all variables related to education have the expected sign and are statistically significant. Also *age* and *age*² have the expected signs, but in Germany and Italy the coefficients are not significant. The sign of other variables differs among countries. We observe that in Germany both speaking English and speaking French significantly decreases the probability of women being unemployed. Interestingly, contrary to the case of men, speaking French has a stronger effect on the probability of being unemployed than English. In Spain and in Italy, knowledge of English or French is not associated with a lower probability of being unemployed. These results partially contradict those of Araújo *et al.* (2015), who find a significant effect of knowledge of English (but not French) in the three countries. When computing the marginal effects, it turns out that speaking French in Germany reduces the risk of being unemployed for woman by 5.8 percent, while speaking English only by 5.5 percent. Note that the model explains the employment situation for German women much better than for Italian and Spanish women. The next section includes a discussion on reasons for such differences and it presents some possible model improvements.

Table 10 presents the results of the probit regression for Model 2. Marginal effects are indicated in italics.

Insert Table 10 here

Again, the coefficients and the estimates of the marginal effects for the *Xlist* control variables do not substantially change with respect to Model 1. The interpretation of the estimations results for the linguistic variables reveals some interesting facts. In Germany, the coefficients of the variables *kenglish2*, *kenglish3*, *kenglish4* have the expected negative sign, but only the coefficient corresponding to a “good” level of English (*kenglish3*) is statistically significant. According to our estimates, speaking English at a good level in Germany, reduces the probability for women of being unemployed by 9.6 percent, all other things being equal. For men, we had a very different result. The coefficients were statistically significant only for a fair level and a proficient level of knowledge of English. One can speculate that in this country a larger share of women hold intermediate job positions requiring a good level of knowledge but not very high skills.¹⁰ The estimates for French are not consistent with those provided in Table 9. None of the coefficients for variables *kfrench2*, *kfrench3*, *kfrench4* are statistically significant, whereas the coefficient of the variable *langused_FR* was significant. In Italy, results of Table 9 and Table 10 lead to the same conclusion: speaking English or French, no matter the level, is not associated with a lower unemployment risk. In Spain, a statistically significant effect of language skills on the probability of being unemployed is found only for English spoken at a very good level (-11 percent). Fair and intermediate levels of competence in both languages are not associated with significant effects on unemployment risk.

¹⁰ In our sample, 8.5 percent of German men who work full time have a position defined in the AES as “clerical support worker”, whereas this percentage is 16.9 percent for German women.

5. Discussion

The pseudo- R^2 shows that the model works better on the German data than on the Italian and Spanish one. Other unobserved labour market characteristics seem to prevail in both Southern European countries. We should keep in mind that in 2011 there could be irregularities in the labour markets as a result of the aftermaths of the financial crisis. Generally speaking, a first methodological question relates to endogeneity due to unobserved heterogeneity. Thus, we augmented the model with interaction of age and language skills. We did so taking into account the particular severe unemployment situation of the young. However, we do not find differences in language skill rewards among age groups that can improve the model performance. We also augmented the model taking into account possible interactions between educational level and language skills but did not find statistical differences for those interactions that could improve our model. As a result, a lot of variation in the employment status remains unexplained in our statistical model. In particular, we expect that regional effects can strongly contribute to explaining such a variation. However, we cannot include regional fixed effects because no data on the respondents' region of residence is available in the AES. Yet, in the three countries examined considerable regional differences exist as regards unemployment rates, for example between the ex German Democratic Republic (GDR) Länder and Bavaria or Baden-Württemberg, between the Italian Mezzogiorno and Lombardy, and between Andalusia and Catalonia in Spain. Further, it is possible that a very good knowledge of French has a significant negative effect on the probability of being unemployed in border regions, such as Saarland in Germany, or Piedmont in Italy. We have included the variables *urb1* and *urb2* as proxies instead, but with little impact. We expect that more variation in the employment status can be explained by the target sector and target job level. Nevertheless, those variables are only observable for those who are employed, so we cannot elaborate on the sector or type of occupation in the two models. We tried a specification that used additional information on the field of education (humanities, social sciences, technology), but the model did not improve. We also implemented dummies for educational field and its intersection with language knowledge and did not find much except for the sector "services" reducing unemployment. In addition, unobserved heterogeneity might bias the estimates of the educational and linguistic variables unobserved factors such as labour market experience, social competences, intelligence, networking skills, and social family background are correlated with our educational and linguistic covariates. A possible strategy to reduce heterogeneity is to use parent's educational level as instrumental variable (IV). This IV, nevertheless, has been often criticised in the literature (see Chiswick and Miller 2014). A second source of endogeneity could be linked to reverse causality. This would mean that being employed has an impact on language skills, which could bring about on-job language training. This, nevertheless, is quite unlikely. If reverse causality were an issue in our estimation model, our estimates would be upward biased.

6. References

- Aldashev, Alisher, Johannes Gernandt, and Stephan L. Thomsen (2009). "Language usage, participation, employment and earnings Evidence for foreigners in West Germany with multiple sources of selection", *Labour Economics*, 16, pp. 330–341.
- Araújo, Luísa, Patrícia Dinis da Costa, Salvo Flisi, and Elena Soto Calvo (2015). *Language and Employability*. Luxembourg: European Commission - Joint Research Centre.

- Beadle, Shane, Martin Humburg, Richard Smith, and Patricia Vale (2015). *Study on Foreign Language Proficiency and Employability*. Brussels: European Commission.
- Bel Habib, Ingela (2011). *Multilingual skills provide export benefits and better access to new emerging markets. Multilingual market communication among Swedish, Danish, German and French small and medium sized enterprises*, Sens Public (International Web Journal). Montreal: University of Montreal.
- Chiswick, Barry R. and Paul W. Miller (2007). *The economics of language: International analyses*. New York: Routledge.
- Chiswick, Barry R. and Paul W. Miller (2014). "International migration and the economics of language", in Chiswick, Barry R. and Paul W. Miller (eds.) *Handbook of the Economics of International Migration*, pp. 211-269. Amsterdam: North Holland.
- Chun, Hyunbae and Injae Lee (2001). "Why do married men earn more: productivity or marriage selection?", *Economic Inquiry*, 39 (2), pp. 307-317.
- Cornwell, Katy and Brett Inder (2008). "Language and Labour in South Africa", *Journal of African Economies*, 17 (3), pp. 490-525.
- Duncan, Alan and Astghik Mavisakalyan (2015). "Russian language skills and employment in the Former Soviet Union", *Economics of Transition*, 23 (3), pp. 625–656.
- Dustmann, Christian and Francesca Fabbri (2003). "Language proficiency and labour market. Performance of immigrants in the UK", *The Economic Journal*, 113, pp. 695-717.
- European Commission (2003). *Promoting language learning and linguistic diversity: An Action Plan 2004 – 2006*, COM(2003) 449 final. Brussels: European Commission.
- European Commission (2005). *A New Framework Strategy for Multilingualism*, COM(2005) 596 final. Brussels: European Commission.
- European Commission (2008). *Multilingualism: an asset for Europe and a shared commitment*, COM(2008) 566 final. Brussels: European Commission.
- European Commission (2010). *Employers' perception of graduate employability*, Flash Eurobarometer Series #304. Brussels: European Commission.
- European Commission (2012). *Language competences for employability, mobility and growth*, Accompanying the document. Communication from the Commission. "Rethinking Education: Investing in skills for better socio-economic outcomes". SWD(2012) 372 final. Brussels: European Commission.
- Fabo, Brian, Miroslav Beblavy, and Karolien Lenaerts (2017). "The importance of foreign language skills in the labour markets of Central and Eastern Europe: assessment based on data from online job portals", *Empirica*, 44 (3), pp. 487–508.
- Gazzola, Michele, François Grin, and Bengt-Arne Wickström (2016). "A concise bibliography of language economics", in Gazzola, Michele and Bengt-Arne Wickström (eds.) *The Economics of Language Policy*, pp. 53-92. Cambridge (MA): MIT Press.
- Grin, François, Claudio Sfreddo, and François Vaillancourt (2009). *Langues étrangères dans l'activité professionnelle*, Project n° 405640-108630. Geneva: University of Geneva www.elf.unige.ch.
- Grin, François, Claudio Sfreddo, and François Vaillancourt (2010). *The economics of the multilingual workplace*. London: Routledge.

- Isphording, Ingo (2015). "Language and labor market success", in Wright, James (ed.) *International Encyclopedia of the Social & Behavioral Sciences, 2nd edition, Volume 13*, pp. 260-265. Amsterdam: Elsevier.
- Isphording, Ingo and Sebastian Otten (2014). "Linguistic barriers in the destination language acquisition of immigrants", *Journal of Economic Behavior & Organization*, 105, pp. 30-50.
- Krzyżanowski, Michał and Ruth Wodak (2011). "Political strategies and language policies: the European Union Lisbon strategy and its implications for the EU's language and multilingualism policy", *Language Policy*, 10, pp. 115-136.
- Leslie, Derek and Joanne Lindley (2001). "The impact of language ability on employment and earnings of Britain's ethnic communities", *Economica*, 68, pp. 587-606.
- Lindemann, Kristina and Irena Kogan (2013). "The role of language resources in labour market entry: Comparing Estonia and Ukraine", *Journal of Ethnic and Migration Studies*, 39 (1), pp. 105-123.
- Maxwell, Nan L. (2010). "English language and low-skilled jobs: The structure of employment", *Industrial Relations*, 49 (3), pp. 457-465.
- McQuaid, Ronald W. and Colin Lindsay (2005). "The concept of employability", *Urban Studies*, 42 (2), pp. 197-219.
- Ministry of Labour (2006). *The supply and demand for linguistic education in Italy*. Rome: Italian Ministry of Labour www.letitfly.it.
- Mulkerne, Sean and Anne Marie Graham (2011). *Labour market intelligence on languages and intercultural skills in higher education*. Southampton: University Council of Modern Languages.
- Pollmann-Schult, Matthias (2010). "Marriage and earnings: why do married men earn more than single men?", *European Sociological Review*, 27 (2), pp. 147-163.
- Rendon, Silvio (2007). "The Catalan premium: language and employment in Catalonia", *Journal of Population Economics*, 20, pp. 669-686.
- Tritscher-Archan, Sabine (ed.) (2008). *Fremdsprachen für die Wirtschaft. Analysen, Zahlen, Fakten*. Vienna: Institut für Bildungsforschung der Wirtschaft.
- Yao, Yuxin and Jan C. van Ours (2015). "Language skills and labor market performance of immigrants in the Netherlands", *Labour Economics*, 25, pp. 76-85.
- Zhang, Weiguo and Gilles Grenier (2013). "How can language be linked to economics?", *Language Problems & Language Planning*, 37 (3), pp. 203-226.
- Zorlu, Aslan and Joop Hartog (2018). *The impact of language on socioeconomic integration of immigrants*, IZA Discussion Papers Series, No. 11485. Bonn: Institut zur Zukunft der Arbeit - Institute of Labor Economics.

Tables

Table 1: Foreign languages known by nationals aged 25-64 in Germany, Italy and Spain. Results in percent

	Germany	Italy	Spain
Language			
<i>English</i>	68.2	45.4	30.7
<i>French</i>	18.3	23.2	12.9
<i>German</i>	6.3	5.0	2.1
<i>Spanish</i>	6.4	4.4	5.9
<i>Italian</i>	4.4	1.5	2.2
<i>Russian</i>	9.4	0.3	0

Source: AES-2011

Table 2: Level of fluency in English and French of nationals aged 25-64 in Germany, Italy and Spain. Results in percent

	Germany	Italy	Spain
English			
<i>Proficient</i>	10.5	5.1	4.7
<i>Good</i>	23.0	12.6	11.7
<i>Fair</i>	34.1	31.0	11.6
<i>Does not speak English as first of second foreign language</i>	32.4	51.3	72.0
French			
<i>Proficient</i>	1.1	1.4	1.6
<i>Good</i>	2.6	3.8	4.3
<i>Fair</i>	11.4	17.0	5.8
<i>Does not speak French as first of second foreign language</i>	85.0	79.2	88.3

Source: AES-2011

Table 3: Descriptive statistics, Model 1. Men aged 25-64

COUNTRY	VARIABLE	MEAN	STAND. DEV
GERMANY	unemp	.093	.291
	age	44.985	10.2971
	married	.616	.487
	child	.372	.487
	urb1	.482	.450
	urb2	.366	.482
	urb3	.152	.360
	ISCED1	.011	.104
	ISCED2	.0491	.216
	ISCED3	.475	.450
	ISCED4	.095	.293
	ISCED5	.3705	.483
	langused_EN	.7545	.430
	langused_FR	.174	.379
ITALY	unemp	.107	.309
	age	44.084	9.370
	married	.652	.476
	child	.557	.497
	urb1	.452	.498
	urb2	.415	.493
	urb3	.133	.340
	ISCED1	.037	.190
	ISCED2	.313	.464
	ISCED3	.410	.492
	ISCED4	.0490	.216
	ISCED5	.191	.393
	langused_EN	.542	.498
	langused_FR	.207	.405
SPAIN	unemp	.218	.413
	age	43.491	10.087
	married	.635	.482
	child	.514	.450
	urb1	.434	.496
	urb2	.247	.431
	urb3	.319	.466
	ISCED1	.013	.115
	ISCED2	.458	.4982
	ISCED3	.208	.406
	ISCED4	0	0
ISCED5	.321	.467	

langused_EN	.339	.474
langused_FR	.136	.343

Source: AES-2011

In Germany, N= 2,112 ; In Italy, N= 3,084; In Spain, N=5,259

Table 4: Descriptive statistics, Model 2. Men aged 25-64

COUNTRY	VARIABLE	MEAN	STAND. DEV.
GERMANY	unemp	.094	.292
	age	44.999	10.300
	married	.614	.486
	child	.370	.483
	urb1	.477	.499
	urb2	.368	.482
	urb3	.153	.360
	ISCED1	.010	.103
	ISCED2	.050	.218
	ISCED3	.480	.499
	ISCED4	.095	.293
	ISCED5	.363	.481
	kenglish1	.254	.435
	kenglish2	.360	.480
	kenglish3	.270	.444
	kenglish4	.113	.317
	kfrench1	.850	.356
	kfrench2	.119	.324
	kfrench3	.023	.153
	kfrench4	.006	.079
ITALY	unemp	.106	.308
	age	44.092	93.694
	married	.652	.476
	child	.557	.496
	urb1	.452	.497
	urb2	.415	.492
	urb3	.131	.338
	ISCED1	.037	.189
	ISCED2	.314	.464
	ISCED3	.409	.491
	ISCED4	.049	.216
	ISCED5	.189	.391
	kenglish1	.463	.498
	kenglish2	.327	.469
	kenglish3	.153	.360
	kenglish4	.055	.229
	kfrench1	.803	.397
	kfrench2	.144	.351
	kfrench3	.039	.194
	kfrench4	.0134	.115

SPAIN	unemp	.219	.413
	age	43.445	10.099
	married	.635	.481
	child	.514	.499
	urb1	.431	.495
	urb2	.246	.431
	urb3	.321	.466
	ISCED1	.0135	.115
	ISCED2	.463	.498
	ISCED3	.207	.405
	ISCED4	0	0
	ISCED5	.315	.464
	kenglish1	.676	.467
	kenglish2	.131	.338
	kenglish3	.137	.344
	kenglish4	.054	.226
	kfrench1	.882	.321
	kfrench2	.056	.230
	kfrench3	.043	.203
	kfrench4	.017	.132

Source: AES-2011

In Germany, N= 2,050; In Italy, N= 3,054; In Spain, N=5,148

Table 5: Descriptive statistics, Model 1. Women aged 25-64

COUNTRY	VARIABLE	MEAN	STAND. DEV
GERMANY	unemp	.156	.363
	age	44.140	10.357
	married	.477	.499
	child	.289	.453
	urb1	.487	.500
	urb2	.356	.479
	urb3	.156	.363
	ISCED1	.018	.136
	ISCED2	.073	.261
	ISCED3	.437	.496
	ISCED4	.089	.286
	ISCED5	.380	.485
	langused_EN	.734	.441
	langused_FR	.222	.416
ITALY	unemp	.166	.372
	age	42.948	9.467
	married	.576	.494
	child	.532	.499
	urb1	.472	.499
	urb2	.402	.490
	urb3	.125	.331
	ISCED1	.024	.153
	ISCED2	.188	.391
	ISCED3	.394	.488
	ISCED4	.070	.255
	ISCED5	.323	.467
	langused_EN	.633	.482
	langused_FR	.339	.473
SPAIN	unemp	.332	.471
	age	42.683	9.903
	married	.613	.487
	child	.535	.498
	urb1	.485	.499
	urb2	.252	.434
	urb3	.262	.439
	ISCED1	.014	.120
	ISCED2	.342	.474
	ISCED3	.227	.419
	ISCED4		0
ISCED5	.414	.492	

langused_EN	.385	.486
langused_FR	.172	.378

Source: AES-2011

In Germany, N= 1,114; In Italy, N= 1,992; In Spain, N=4,253

Table 6: Descriptive statistics, Model 2. Women aged 25-64

COUNTRY	VARIABLE	MEAN	STAND. DEV.
GERMANY	unemp	.161	.368
	age	44.380	10.321
	married	.483	.499
	child	.289	.453
	urb1	.483	.499
	urb2	.356	.479
	urb3	.159	.366
	ISCED1	.019	.139
	ISCED2	.077	.267
	ISCED3	.452	.497
	ISCED4	.083	.276
	ISCED5	.366	.482
	kenglish1	.280	.449
	kenglish2	.383	.486
	kenglish3	.211	.408
	kenglish4	.124	.330
	kfrench1	.819	.384
	kfrench2	.123	.328
	kfrench3	.035	.184
	kfrench4	.021	.146
ITALY	unemp	.165	.372
	age	43.019	9.475
	married	.575	.494
	child	.531	.499
	urb1	.472	.499
	urb2	.402	.490
	urb3	.125	.331
	ISCED1	.024	.154
	ISCED2	.190	.392
	ISCED3	.395	.489
	ISCED4	.069	.254
	ISCED5	.320	.466
	kenglish1	.371	.483
	kenglish2	.397	.489
	kenglish3	.158	.365
	kenglish4	.072	.258
	kfrench1	.672	.469
	kfrench2	.237	.425
	kfrench3	.065	.247
	kfrench4	.023	.152

SPAIN	unemp	.335	.472
	age	42.703	9.916
	married	.614	.486
	child	.537	.498
	urb1	.482	.499
	urb2	.252	.434
	urb3	.264	.441
	ISCED1	.015	.121
	ISCED2	.347	.476
	ISCED3	.228	.419
	ISCED4		0 0
	ISCED5	.409	.491
	kenglish1	.625	.484
	kenglish2	.159	.366
	kenglish3	.157	.364
	kenglish4	.057	.233
	kfrench1	.843	.363
	kfrench2	.085	.279
	kfrench3	.054	.227
	kfrench4	.016	.129

Source: AES-2011

In Germany, N= 1,056; In Italy, N= 1,966; In Spain, N=4,183

Table 7: Probit regression. Men aged 25-64, Model 1.

	GERMANY		ITALY		SPAIN	
	Coefficients	ME	Coefficients	ME	Coefficients	ME
UNEMP						
AGE	-0.0800*	- .0101706	-0.103***	-.0162364	-0.0610**	- .0172734
	(-2.35)	[.00425]	(-3.54)	[.00473]	(-3.27)	[.00537]
AGE2	0.00112**	.0001428	0.00102**	.0001604	0.000625**	.000177
	(2.89)	[.00005]	(3.04)	[.00005]	(2.93)	[.00006]
MARRIED	-0.679***	- .0988462	-0.507***	-.0890528	-0.330***	- .0956661
	(-6.61)	[.01607]	(-5.92)	[.01489]	(-5.84)	[.01669]
CHILD	-0.0329	- .0041612	0.0411	.0064455	-0.148**	- .0420104
	(-0.28)	[.01462]	(0.51)	[.01188]	(-2.80)	[.01502]
URB1	0.0822	.0104745	-0.0688	-.0107725	0.0938	.0267352
	(0.65)	[.01476]	(-0.73)	[.01494]	(1.77)	[.01534]
URB2	0.0222	.0028366	-0.178	-.0274524	0.111	.0322613
	(0.17)	[.01564]	(-1.86)	[.0146]	(1.91)	[.01737]
ISCED2	-0.796**	- .0587101	-0.708***	-.0944524	-0.737***	- .2026372
	(-2.58)	[.01178]	(-5.15)	[.0164]	(-4.33)	[.04522]
ISCED3	-1.168***	- .1522765	-1.148***	-.1651722	-1.110***	- .2315466
	(-4.18)	[.03937]	(-7.94)	[.02079]	(-6.30)	[.02561]
ISCED4	-1.283***	- .0783831	-0.819***	-.076663	0	
	(-4.14)	[.00981]	(-4.27)	[.00964]	(.)	
ISCED5	-1.633***	- .1764491	-1.341***	-.1267143	-1.540***	- .3363779
	(-5.55)	[.03124]	(-7.98)	[.01053]	(-8.62)	[.02966]
LANGUSED_EN	-0.259**	- .0364643	-0.164*	-.0260621	-0.172**	- .0474842
	(-2.70)	[.01456]	(-2.16)	[.01194]	(-2.99)	[.01546]
LANGUSED_FR	-0.124	- .0148221	0.100	.0164542	0.0661	.0190878

	(-0.89)	[.01494]	(1.22)	[.01405]	(0.92)	[.0212]
_CONS	1.614*		2.585***		1.888***	
	(2.09)		(4.19)		(4.52)	
N	2112		3084		4301	
PSEUDO R-SQ	0.150		0.101		0.090	

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

t-statistics in parenthesis. Marginal effects (ME) in italics. Standard error in square brackets.

Source: AES 2011

Table 8: Probit regression. Men aged 25-64. Model 2.

	GERMANY		ITALY		SPAIN	
	Coefficient	ME	Coefficient	ME	Coefficient	ME
UNEMP						
AGE	-0.0719*	-.0088633	-0.0953**	-.0146913	-0.0618**	-
	(-2.05)	[.00426]	(-3.23)	[.00464]	(-3.28)	.0175468
						[.00542]
AGE2	0.00105**	.0001295	0.000935*	.0001442	0.000631*	.0001794
	(2.64)	[.00005]	(2.75)	[.00005]	(2.94)	[.00006]
MARRIED	-0.731***	-.1043586	-0.529***	-.0914738	-0.323***	-.093806
	(-6.92)	[.01606]	(-6.08)	[.01483]	(-5.63)	[.01693]
CHILD	-0.0309	-.0037831	0.0516	.0079173	-0.154**	-.043857
	(-0.26)	[.01456]	(0.63)	[.01167]	(-2.88)	[.01523]
URB1	0.0603	.0074592	-0.0771	-.0118271	0.0946	.0270422
	(0.47)	[.01467]	(-0.80)	[.01469]	(1.77)	[.0155]
URB2	0.0232	.0028781	-0.188	-.0283491	0.112	.03246
	(0.17)	[.0154]	(-1.93)	[.01438]	(1.90)	[.01758]
ISCED2	-0.859**	-.0588372	-0.686***	-.0901195	-0.735***	-
	(-2.72)	[.01107]	(-4.95)	[.01639]	(-4.32)	.2035539
						[.04566]
ISCED3	-1.209***	-.1567772	-1.137***	-.1603147	-1.124***	-
	(-4.23)	[.04203]	(-7.78)	[.0207]	(-6.37)	.2342079
						[.02551]
ISCED4	-1.350***	-.0771357	-0.793***	-.0735974	0	0
	(-4.21)	[.00986]	(-4.08)	[.00984]	(.)	0
ISCED5	-1.663***	-.1697537	-1.382***	-.1256086	-1.552***	-
	(-5.46)	[.03137]	(-7.86)	[.01048]	(-8.65)	.3369871
						[.02933]
KEN-GLISH2	-0.278**	-.0324952	-0.193*	-.0284021	-0.206**	-
	(-2.66)	[.01153]	(-2.33)	[.01155]	(-2.75)	.0547221
						[.01843]
KEN-GLISH3	-0.143	-.0167647	-0.0928	-.013675	-0.0712	-.019801

	(-1.13)	[.01406]	(-0.83)	[.01519]	(-0.91)	[.02128]
KEN-GLISH4	-0.667**	<i>-.0555493</i>	-0.174	<i>-.0240794</i>	-0.305*	<i>-.076621</i>
	(-2.82)	[.0127]	(-0.94)	[.02286]	(-2.35)	[.02857]
KFRENCH2	-0.0796	<i>-.0093781</i>	0.0443	<i>.0069761</i>	0.0824	<i>.0241046</i>
	(-0.49)	[.01749]	(0.46)	[.0154]	(0.82)	[.02989]
KFRENCH3	-0.476	<i>-.0412215</i>	0.235	<i>.0419173</i>	0.0677	<i>.0197168</i>
	(-0.97)	[.02595]	(1.39)	[.03481]	(0.53)	[.03958]
KFRENCH4	0	0	-0.706	<i>-.0664352</i>	0.0464	<i>.0134329</i>
	(.)	(.)	(-1.53)	[.02136]	(0.24)	[.05771]
_CONS	1.473		2.416***		1.907***	
	(1.85)		(3.88)		(4.53)	
N	2019		3054		4215	
PSEUDO R-SQ	0.162		0.105		0.091	

* P<0.05, **P<0.01, *** P<0.001

t-statistics in parenthesis. Marginal effects (ME) in italics. Standard error in square brackets.
Source: AES 2011

Table 9: Probit regression. Women aged 25-64, Model 1.

	GERMANY		ITALY		SPAIN	
	Coefficients	ME	Coefficients	ME	Coefficients	ME
UNEMP						
AGE	-0.0515 (-1.22)	- [.00811]	-0.0616 (-1.78)	-.0140222 [.008]	-0.0654** (-3.15)	- [.00748]
AGE2	0.000609 (1.25)	.0001198 [.00009]	0.000266 (0.64)	.0000606 [.0001]	0.000631** (2.64)	.0002268 [.00009]
MARRIED	-0.629*** (-5.43)	- [.02143]	-0.0864 (-1.05)	-.0198034 [.01846]	0.0722 (1.36)	.0258733 [.01865]
CHILD	0.0180 (0.14)	.0035575 [.02485]	-0.0476 (-0.58)	-.0108536 [.01811]	0.00881 (0.17)	.0031655 [.01881]
URB1	-0.319* (-2.32)	-.06248 [.02544]	-0.0958 (-0.88)	-.0217422 [.02457]	-0.0686 (-1.22)	- [.02009]
URB2	-0.331* (-2.29)	-.061618 [.02392]	-0.0503 (-0.46)	-.0113925 [.02437]	-0.0277 (-0.45)	- [.02223]
ISCED2	-0.678* (-2.05)	- [.0276]	-0.709*** (-3.37)	-.1260886 [.02771]	-0.778*** (-4.06)	-.258546 [.05719]
ISCED3	-1.165*** (-3.82)	- [.05213]	-1.187*** (-5.56)	-.2392376 [.03778]	-1.315*** (-6.72)	- [.03816]
ISCED4	-1.242*** (-3.61)	- [.01839]	-0.892*** (-3.70)	-.1299164 [.01913]	0 (.)	
ISCED5	-1.757*** (-5.49)	- [.04548]	-1.344*** (-6.08)	-.2414773 [.03101]	-1.786*** (-9.08)	- [.04586]
LANGUSED_EN	-0.262* (-2.33)	- [.02495]	0.0160 (0.19)	.0036217 [.01939]	0.00186 (0.03)	.0006679 [.01996]
LANGUSED_FR	-0.326*	-	0.0850	.019621	-0.0157	-

		<i>.0575337</i>		<i>.0056356</i>
	(-2.12)	<i> [.02472]</i>	(1.11)	<i> [-0.24]</i>
				<i> [.02313]</i>
_CONS	2.007*		2.272**	2.416***
	(2.14)		(3.25)	(5.21)
N	1111		1992	3512
PSEUDO R-SQ	0.167		0.087	0.096

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

t-statistics in parenthesis. Marginal effects (ME) in italics. Standard error in square brackets.

Source: AES 2011

Table 10: Probit regression. Women aged 25-64. Model 2.

	GERMANY		ITALY		SPAIN	
	Coefficient	ME	Coefficient	ME	Coefficient	ME
UNEMP						
AGE	-0.0606 (-1.39)	-.0127085 [.00904]	-0.0575 (-1.64)	-.0130492 [.00805]	-0.0658** (-3.15)	- .0237314 [.00755]
AGE2	0.000709 (1.41)	.0001485 [.0001]	0.000217 (0.52)	.0000492 [.0001]	0.000630* * (2.62)	.0002271 [.00009]
MARRIED	-0.685*** (-5.76)	-.1430496 [.02372]	-0.0838 (-1.01)	-.0191398 [.01866]	0.0792 (1.49)	.0284755 [.01884]
CHILD	0.0474 (0.35)	.0100491 [.0274]	-0.0720 (-0.87)	-.016369 [.0183]	0.00624 (0.12)	.0022504 [.01904]
URB1	-0.334* (-2.37)	-.0695076 [.02781]	-0.102 (-0.92)	-.022964 [.02467]	-0.0618 (-1.09)	-.222363 [.02025]
URB2	-0.346* (-2.34)	-.0685728 [.0263]	-0.0581 (-0.53)	-.0131121 [.0244]	-0.0353 (-0.57)	- .0126938 [.02239]
ISCED2	-0.660* (-1.98)	-.0988658 [.03106]	-0.707*** (-3.36)	-.1257194 [.02781]	-0.796*** (-4.15)	- .2654328 [.05763]
ISCED3	-1.134*** (-3.69)	-.2315258 [.05794]	-1.170*** (-5.48)	-.2358784 [.03787]	-1.337*** (-6.83)	- .3726513 [.03812]
ISCED4	-1.201*** (-3.40)	-.1376967 [.01989]	-0.887*** (-3.67)	-.1289775 [.01919]	0 (.)	
ISCED5	-1.722*** (-5.27)	-.2855599 [.04355]	-1.348*** (-6.05)	-.2402544 [.03079]	-1.769*** (-8.98)	- .5388013 [.046]
KEN-GLISH2	-0.191 (-1.61)	-.0391637 [.02352]	-0.00576 (-0.06)	-.0013058 [.02045]	0.0538 (0.80)	.019556 [.02488]

KEN-GLISH3	-0.554** (-3.15)	<i>-.0963141</i> [.02374]	0.0649 (0.55)	<i>.0150818</i> [.02798]	0.0170 (0.23)	<i>.0061452</i> [.02677]
KEN-GLISH4	-0.276 (-1.19)	<i>-.0510039</i> [.03625]	-0.0421 (-0.25)	<i>-.0093639</i> [.03645]	-0.332** (-2.69)	<i>.1105851</i> [.0369]
KFRENCH2	-0.144 (-0.74)	<i>-.0283684</i> [.0364]	0.0744 (0.85)	<i>.0172327</i> [.02052]	0.0422 (0.50)	<i>.0153427</i> [.03099]
KFRENCH3		0	0.0878 (0.60)	<i>.0207193</i> [.03691]	0.0281 (0.26)	<i>.0101721</i> [.03912]
KFRENCH4						-
	0.519 (1.30)	<i>.139443</i> [.12816]	0.0514 (0.20)	<i>.0119644</i> [.05874]	-0.392 (-1.64)	<i>.1268835</i> [.06638]
_CONS	2.201* (2.28)		2.210** (3.13)		2.443*** (5.23)	
N	1013		1966		3449	
PSEUDO R-SQ	0.169		0.087		0.097	

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

t-statistics in parenthesis. Marginal effects (ME) in italics. Standard error in square brackets.

Source: AES 2011