

US and them: Job quality differences between natives and immigrants in Europe

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Abstract

Using microdata from the European Union Labour Force Survey (EU-LFS) and aggregate indicators of labour market institutions, this article compares the job quality of native and non-native workers across European countries and analyses the impact of the institutional settings on the job quality differential between both groups. The LFS is used to measure a job quality index for the period 2005–2017. We find that some immigrant groups fare worse than natives, the contribution of the “composition effect” to explain this differential is large, and the institutional framework affects the immigration gap in job quality. In particular, some labour market institutions (more centralized wage bargaining, stricter employment protection legislation) tend to be detrimental for immigrants relative to natives, while integration policies seem to work well in reducing these differences.

KEYWORDS

European countries, immigrant workers, job quality, labour market institutions

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INTRODUCTION

The degree of competition in the labour market between natives and non-natives has been extensively studied in the economic literature (Greenwood & Hunt, 1995; Lewis, 2013). Although many empirical studies suggest that the degree of substitution between both groups in low-skilled jobs is small, other works find evidence to the contrary.¹ This issue has far-reaching consequences. On the one hand, the main argument in favour of immigration is that non-native workers take jobs of lower quality that natives do not want to accept. On the contrary, the usual argument against immigration is that non-natives occupy jobs that natives would be willing to take.

Therefore, an equal willingness for both groups to work in jobs that do not differ in quality would gauge the existence of competition between natives and immigrants. In this sense, analysing the differences in the quality of jobs that both groups of workers hold should provide a more comprehensive picture of the nature of an immigrant's integration in the labour market than just looking at wages or the incidence of employment/unemployment. Surprisingly enough, the literature comparing the employment quality between native and non-native workers has not developed much (Díaz-Serrano, 2013). This paper aims at filling this gap in the empirical literature regarding immigration and the labour market by using a job quality index (JQI) which only includes variables characterizing jobs.

At the same time, there is no systematic evidence of how institutional settings affect the differences in labour market outcomes between natives and immigrants. Despite its importance, the role of institutions and policies in immigrant integration, in general, and their impact on labour market outcomes (including employment quality), in particular, remains underexplored (Guzi et al., 2015; Huber, 2015). Labour market institutions can contribute (either positively or negatively) to job quality differences, by increasing or decreasing it over time and by producing different impacts between segments of workers.

In principle, societies with more encompassing, inclusive institutions and more generous welfare and social policy (providing assistance in labour market transitions) would exhibit better labour market outcomes, as the “varieties of capitalism” (VoC) literature argues (Hall & Soskice, 2001; Hanké et al., 2007). In this setting, two types of advanced economies, “liberal market economies” (LME) and “coordinated market economies” (CME), are distinguished according to the predominant ways in which firms coordinate with each other and other stakeholders in different areas of industrial relations. In this so-called “production regime” model, the hypothesis is that the job quality will be greater in CMEs than in LMEs, since in the former employers' strategy is to commit to long-term employment relations. The implication is not only better job security but also better job quality in all dimensions in the CMEs. However, countries with less flexible labour markets (with more centralized collective bargaining that compresses the wage distribution and stricter employment protection regulations that reduce the flows of job creation and destruction) may favour the “insiders” and affect negatively the outcomes of immigrants relative to natives. Thus, the impact of institutions on the differential job quality between natives and non-natives is not straightforward (see below).

Our study breaks new ground by comparing the job quality of native and non-native workers across European countries and relating the differences between both groups to the prevailing institutional frameworks. Given this objective, the article sets out to examine the following questions. First, are there differences in the quality of employment between natives and immigrants? Second, to what extent are these gaps explained by the “composition effect,” that is, the difference in the characteristics of workers and jobs rather than differences in the average employment quality that may influence the quality outcomes? And third, what is the role of institutions in explaining these job quality gaps?

Thus, we first analyse whether the quality of jobs held by immigrants and natives differ. We do this by calculating the raw differential in job quality and estimating OLS regressions by country. Furthermore, since the quality of employment is a continuous variable, we use methods to decompose the various components of the differences in job quality between native and non-native workers across countries. This allows us to examine the role of the “composition effect” in explaining job quality differentials within countries. Finally, we analyse the impact of

institutions on the quality of jobs, once the data of the selected countries are pooled, by estimating models that include macro variables measuring labour market institutions and policies.

The structure of the article is as follows. Section two offers a review of the literature on job quality and immigration. Section three presents the EU-LFS database, describes the main variables and provides some basic descriptive evidence. In section four, we carry out the empirical analyses and report the estimation results. Finally, the last section summarizes and discusses the main conclusions.

LITERATURE REVIEW

The role of institutions

The literature on immigration and the labour market has focused the attention on two main areas: how the presence of immigrants affects the outcomes of native workers, and how receiving labour markets assimilate immigrant workers (for a recent review, see Edo et al., 2020). However, despite the development of research on immigration and the labour market, and considering the importance of the assumption that natives and immigrants are willing to accept jobs that are similar in quality, few studies have examined the relationship between the institutional framework and the immigrants' outcomes in host countries. And if there is one area of the labour market where institutions can be especially relevant, it is in the competition between natives and non-natives.

While economic institutions play several roles, one rationale is to protect incumbent native-born workers from competition with foreign workers. Labour market characteristics, such as employment protection legislation, systems of collective bargaining and minimum wages, may serve as a preventive factor for earnings and employment adjustments. Demands for social insurance and protection policies may arise due to increased migration levels. At the same time, policies can help mitigate the potentially negative effects of shocks that occur on the labour-supply side, such as the immigration-induced increases in the workforce.

The literature on the VoC (Hall & Soskice, 2001; Hanké et al., 2007) establishes that more protective and inclusive institutions and more generous social policies would bring about better labour market outcomes, so job quality will be greater in CMEs than in LMEs. This framework is similar to the "employment regime" (or the "power resources") model, which, within CMEs, differentiates between social corporatist (or inclusive) and dualist regimes (Gallie, 2007; Olsen et al., 2010), the distinctiveness of which is driven by the nature and strength of trade unions and the balance of power between labour and capital. The prediction is not only that the job quality is higher in CMEs than in LMEs but also that it is more equally distributed in social corporatist regimes (such as the Nordic countries).

However, one can argue that this does not have to be the case. Thus, it would be possible that stronger trade unions can work to ensure equal employment conditions for immigrants and systems with more extensive collective agreements provide more inclusive environments supporting the integration and the job quality of immigrants, but those foreigners with less attractive attributes may find it more difficult to find a "good" job under such labour market setting. At the same time, the level of labour market flexibility can affect the quality of the jobs natives and immigrants can access; so, if employment protection legislation for permanent workers (insiders) is stricter, non-natives with less favourable attributes may face barriers to finding a (regular) job.

Several studies analyse the impact of institutions on the outcomes of host economies (Angrist & Kugler, 2003; Brücker et al., 2014; Foged et al., 2019). Other studies, however, focus more explicitly on the outcomes of immigrants relative to native workers. Some works are case studies of several countries that examine how compositional effects, welfare state regimes and migration policy are important in determining the outcomes of immigrants (Antecol et al., 2006; Cangiano, 2012). Others are cross-country comparative studies that concentrate

on specific indicators (basically, employment and unemployment rates) to measure immigrants' integration and usually adopt the VoC framework.

For instance, the results of Kogan (2006) indicate that liberal welfare states (with more flexible labour markets) are associated with lower employment disadvantages of (male) immigrants. In the same vein, Huber (2015) finds that countries with more centralized wage bargaining, higher union density and stricter product market regulations have worse labour market outcomes (employment and unemployment probabilities) for their immigrants relative to natives, even after controlling for compositional effects. Finally, Guzi et al. (2015) focus their attention on four gaps: labour force participation, unemployment, low-skilled employment and temporary employment. Their results suggest that stronger unions can provide for more favourable immigrant labour market characteristics, although these benefits may be reduced or overturned due to increased unexplained immigrant-native labour market gaps. Similarly, whereas stronger protection of regular employment contracts may be associated with favourably composed immigrant populations, it also results in immigrants having more difficult access to employment, skilled jobs and permanent contracts. In addition, protection of temporary employment contracts generally has an adverse effect on both explained and unexplained immigrant-native labour market gaps.

Immigration and job quality

A key element worth noting is that almost all the empirical literature that examines the relationship between immigration and the labour market focuses its attention on the usual labour variables related to quantities (the employment rate and the unemployment rate) and to prices (wages). In fact, the number of studies that analyse the quality of jobs held by natives and non-natives is surprisingly very limited. These studies generally focus on specific variables that approximate job quality. OECD/UE (2015) examines separately indicators on job contracts, working hours, job skills, educational mismatch, the incidence of self-employment and the share of workers employed in the public services sector. In the same line, Hamermesh (1998) looks at working at unpleasant times (in the evening and at night), the risk of on-the-job injury and the duration of lost workday injuries, while Giuntella (2012) examines working at "atypical" shifts (evenings, nights and Sundays), Zavodny (2015) and Dillender and McInerney (2020) working in jobs with exposure to hazardous conditions, and Ballarino and Panichella (2013) holding a "good job" (defined as having a stable contract with an ISCO-88 score code less than or equal to 8). Few studies focus on a set of variables or build quality indexes. For instance, Díaz-Serrano (2013) uses a system of variables that take account of environmental working conditions, physical demanding tasks and exposure to physical damage.

These authors usually find that the immigrants work in lower quality jobs than the natives. For the USA, Hamermesh (1998) points to very weak evidence of any difference between immigrants and natives generally in the amenities associated with the jobs they hold, given their observable characteristics, so he concludes that the preconditions for the absence of direct labour market competition between immigrants and natives do not exist. However, the results of other authors are more clear-cut. Zavodny (2015) show that immigrants work in occupations with more exposure to hazardous conditions and higher injury and fatality rates than similarly educated US natives. Gazioglu and Sloane (1994) show that most immigrants in the UK are employed in positions where there are undesirable working conditions. For Italy, Giuntella (2012) documents that immigrants are more likely to work at "atypical" shifts than natives. Finally, the results of Díaz-Serrano (2013) with Spanish data indicate that native and immigrant workers have a similar taste for most job amenities. Despite that, immigrants are more tolerant of jobs involving poorer working conditions. He also finds that immigrants work in lower quality jobs (African-born workers are the group who suffers the worst working conditions). However, some of these poor conditions tend to improve over time, something that suggests a process of assimilation in terms of job quality.

Working hypotheses

The summary of the literature review reveals that the empirical evidence tends to point out to worse working conditions of immigrants relative to natives. However, none of the previous studies focusing on working conditions addresses the potential impact of labour market institutions in shaping differences in job quality. Based on the previous discussion of the limited literature that examines the potential effects of the institutional framework on labour market outcomes, we put forward three hypotheses regarding the quality of jobs that immigrants hold compared with those of natives and the impact of labour market institutions on shaping the differences in job quality between immigrants and natives.

H1. Beyond the differences in participation in the labour market and in employment and unemployment rates, the jobs that immigrants take exhibit worse working conditions than those of natives. Therefore, there is a differential in the quality of employment against immigrant workers when compared to native workers.

H2. Part of this differential is due to the different composition of immigrants and natives. This component reflects the various characteristics of native-born and foreign-born workers, especially their human capital endowments. Controlling for education and other personal attributes should reduce the immigration gap of job quality. Moreover, taking account of the attributes of the job positions should reduce much more and even eliminate the differential. According to this "composition hypothesis," once compositional factors have been adequately controlled for, there should be hardly any difference (or no difference at all) in job quality, *ceteris paribus*, between natives and non-natives.

H3. Institutions regulating the labour market and the entry into the host country may have a strong impact on the job quality of immigrants, since such institutions define their opportunities relative to natives. In principle, the job quality differential should be larger (less favourable for immigrants) the less flexible is the labour market, the higher is the unionization and/or centralization of wage bargaining, the more compressed the wage distribution, and the less stringent are the anti-discrimination policies of the receiving country.

In the empirical section of the article, we try to test these predictions by conducting an analysis for a group of countries instead of just one country, which allows us to focus attention on the contribution of the institutional settings to affect the quality of jobs and its difference by origin.

DATA

The database

We use data from the annual EU-LFS. This survey is directed to households and includes information on the demographic and socio-economic characteristics of all the household members. "Natives" are defined as individuals whose origin (country of birth) is the same as the corresponding country of residence (regardless of their nationality) and "non-natives" as individuals with a different origin. We have grouped the immigrant population into the following categories: (1) other EU15-countries and North-America; (2) "new" EU-countries (New Member States, NMS, countries that joined the EU in 2004, 2007 and 2013); (3) other European, non-EU countries; (4) Asia; (5) Africa; and (6) Central/South-America.²

In the analysis, we use yearly data for the period 2005–2017 (spanning a full business cycle) and consider individuals from 12 EU Member States: Austria (AT), Belgium (BE), Denmark (DK), Spain (ES), Finland (FI), France (FR), Ireland, (IE), Italy (IT), the Netherlands (NL), Portugal (PT), Sweden (SE) and the United Kingdom (UK). The total number of observations amounts to 8,386,473, of which 705,976 (8.4%) correspond to immigrants. Sample sizes by country are provided in the last column of Table 2 (see below). Inspection of the data by host country and

group of immigrants suggests the absence of reliability issues. In fact, the number of cases is below 1,000 in just a few cells (one group of immigrants in Portugal and five in Finland).

Using information on a set of questions, the database provides an indicator on the labour market status of each adult during the reference week. This indicator establishes whether the individual is employed, unemployed or inactive. For employees, there is a section containing questions on the attributes of jobs held by workers (type of contract, job category, date of starting the labour relationship and working time, for instance) and the firms in which they are employed (size and economic activity of the workplace). There are also questions on other relevant aspects related to working conditions, as participating in on-the-job training activities and working “atypical” hours.

Thus, the EU-LFS has some characteristics that make it ideal for our study, since it contains a set of variables that can be used for examining employment quality, allows for long time series and has a large sample. Related to the latter, the measurement of job quality at the individual level allows one to compare job quality for different groups of workers. Not all the existing indicators in the literature are based on individual data, something that hinders their use in examining distributional aspects appropriately (Muñoz de Bustillo et al., 2011).

We rely on Arranz et al. (2018), who build and measure a JQI related to the areas of opportunities for improvement and work-life balance and partially working conditions and security using microdata from the EU-LFS. This JQI covers most of the four main dimensions of what in the literature is considered the multidimensional concept of job quality: socio-economic security (decent wages and stability); working conditions (intrinsic quality of work and health and safety); opportunities for improvement (qualification and training); and a balance of working and non-working life.³ Table A1 of the Appendix 1 provide the main characteristics of this synthetic index and its three constituent dimensions.

Labour market institutions

Labour market institutions are an integral part of a broader institutional context in which immigration and immigrant integration take place, thus affecting how difficult it is for non-native people to integrate in the labour market of the receiving country. In this context, we consider five domains: collective bargaining; union power; minimum wage; hiring and firing regulations; and other policies that may prevent immigrants from accessing specific occupations, switching jobs, obtaining permanent residence or moving across geographical areas. The information concerning the indicators on these institutions is gathered from different sources and merged with the EU-LFS individual data.

On the one hand, the Amsterdam Institute for Advanced Labour Studies (AIAS) database (Visser, 2016b) provides the indicators on the first three institutional areas. Since it contains many indicators on the characteristics of the collective bargaining system, we select two related to coordination and centralization. Both indicators (*Coordination* and *Centralization*) are categorical: the first one ranges from 1 to 5 (from “Fragmented bargaining, mostly at the company level” to “Economy-wide bargaining”); the second one from 1 (“Decentralized system”) to 5.75 (“Centralized system”). As for the minimum wage, the AIAS database provides an indicator that reflects the (increasing) degree of government discretion and intervention in setting the minimum wage. This indicator (*Minimum*) ranges from 0 (“No statutory minimum wage, no sectoral or national agreements”) to 7 (“The minimum wage is set by the government, without a fixed rule”). Finally, union power is measured by the bargaining coverage rate (*Coverage*), built as a ratio between covered workers and total employees.

On the contrary, the OECD’s employment protection legislation (EPL) indicators are used to capture the strictness of hiring and firing regulations. One (*EPL-Regular*) refers to the employment protection of permanent workers against individual dismissal and other additional provisions for collective dismissals; another one (*EPL-Temporary*) is related to the regulation of the conditions of temporary employment on either fixed-term or temporary help agency contracts. Both indicators are measured on a scale between 1 (looser regulations) and 6 (stricter

regulations). In the empirical section of this article, we make use of the EPL indicator for regular workers, assuming that it better captures the incentives of firms in the process of creating and destroying more permanent positions, something that may impact differently on native and non-native workers.

Finally, we also consider other policies that may hinder the professional mobility and career advancement of immigrants, thus affecting the quality of jobs they hold. We evaluate the impact of such policies on employment quality using the Migrant Integration Policy Index (MIPEX). This index presents a total of 167 indicators for eight policy areas (labour market mobility, family reunion, education, political participation, long-term residence, access to nationality, anti-discrimination and health), grouped under four sub-sets (eligibility, conditions for acquisition of status, security of status and rights associated with status), determined on the basis of expert surveys. The MIPEX measures national policies on 1–3 scale, with three indicating the highest standards for equal treatment, thus consistently measuring the quality of migrant integration policies across the EU since 2007 (currently, until 2014). In order to make rankings and comparisons, the initial 1–3 scale is converted into a 0, 50, 100 scale for dimensions and policy areas, where 100% is the top score (Scipioni & Urso, 2017).

Basic facts

Table 1 provides the outcomes of the synthetic JQI of native-born people and immigrants in the selected countries. This table reports the average level of the JQI for both groups of workers and the difference between them for the period 2005–2017. The results indicate that there are large differences in job quality across European countries and, more importantly, immigrants hold jobs that exhibit less quality than natives.

These differences are particularly large in Italy and Spain, countries where migratory flows have reversed during the last decades, becoming immigrants' recipients. Furthermore, these countries have traditionally been associated with segmented labour markets, with a large secondary segment characterised by lower salaries and poorer conditions related to job security, working hours and career prospects (Simón et al., 2014/2014). On the contrary, Denmark, frequently stressed as a good example of flexicurity and less segmented labour market (Andersen & Svarer, 2007), shows the highest job quality. Despite that, the lowest differences between immigrants and natives are observed in the United Kingdom and France, countries with a longer migratory tradition.

TABLE 1 JQI by origin status and country. Pooled EU-LFS (2005–2017)

	JQI All (1)	JQI natives (2)	JQI immigrants (3)	Absolute difference (4) = (2)-(3)	Relative difference (5) = 1+[(4)/(3)]
AT	62.8	63.5	59.2	-4.4	0.926
BE	64.4	64.9	61.3	-3.6	0.941
DK	66.8	67.1	64.0	-3.2	0.950
ES	60.7	62.3	52.5	-9.8	0.813
FI	63.4	63.5	59.8	-3.7	0.939
FR	62.6	62.8	60.7	-2.1	0.965
IE	62.4	63.1	59.5	-3.6	0.940
IT	64.1	65.0	57.3	-7.7	0.865
NL	63.7	64.0	61.6	-2.4	0.960
PT	61.0	61.3	58.5	-2.8	0.953
SE	64.8	65.3	62.0	-3.3	0.947
UK	64.9	65.2	63.3	-1.9	0.971

Since the JQI is calculated each year, the quality of employment, as measured by our index, can change over time. Figure 1 (panel (a)) plots the yearly evolution of the JQI for both natives and immigrants using the pooled information of the 12 countries we are studying (the evolutions for each country separately are shown in Figure A1 of the Appendix 1).

Regardless of the year considered, the JQI score of foreigners is always lower than that of natives. The temporal evolution of the index for both groups is very similar. The index fell in the last years of the economic expansion of the 2000s, increased during the recessionary period and has remained almost stable since 2014. As differential elements between both groups, a steep decline in 2008 and a more rapid increase in 2009–2011 is observed in the case of immigrant workers relative to native workers. The differences between immigrants and natives are large and stable in Spain and large and growing in Italy. On the contrary, these differences are small and stable in Denmark and small and growing in Finland. Furthermore, the quality of jobs increased in Sweden, Belgium and the UK (since 2007) but declined in Portugal.

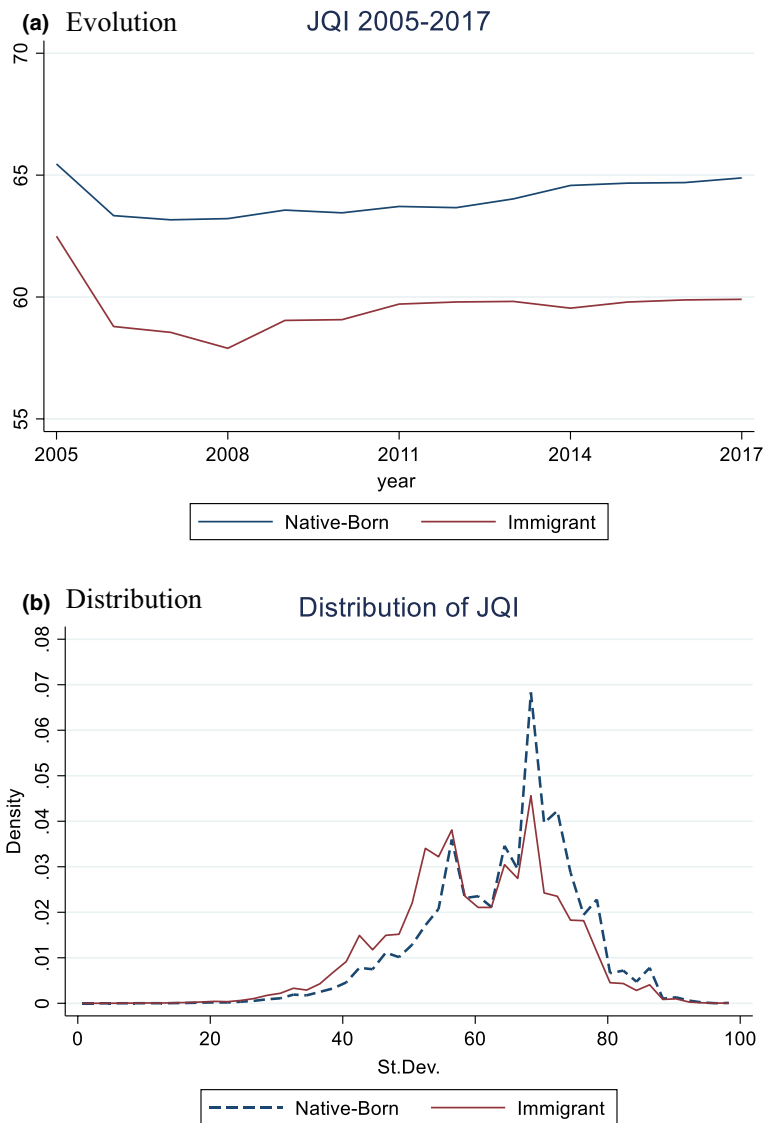


FIGURE 1 JQI by origin. Pooled EU-LFS (2005–2017). (a) Evolution. (b) Distribution

Prior information refers to the average individuals. Another way to show the differences between natives and immigrants is to represent the distribution of the quality of jobs. As the synthetic JQI is continuous, this allows us to examine the distribution of quality and analyse whether there are groups of workers that concentrate in certain parts of the distribution. Figure 2 (panel (b)) displays the distributions by origin status with the pooled data (the distributions for each country separately are provided in Figure A2 of the Appendix 1).

When one looks at the European aggregate, more immigrants are located proportionately in the lower part of the distribution of quality (below value 57) and less in the upper part (above value 67). Natives tend to be more concentrated around relatively high values of the JQI, while immigrants show two modes: one like that of the natives (but with far fewer workers) and another at substantially lower levels. By country, the distributions of both groups are quite similar in France, the UK, the Netherlands and Denmark but quite dissimilar in Austria, Spain and Italy (and even Portugal and Ireland).

As an additional piece of information, Figure 2 plots the difference between natives and immigrants for the three constituent dimensions of the JQI by country. The overall differentials are shown in Table 1 (and Figure 1) are mainly explained by the working conditions dimension, reflecting various degrees of contractual stability among groups of workers. However, differences tend to be smaller in the work-life balance dimension, which measures the length and the programming of the working day. In this case, immigrants fare better than natives in some countries.

The differences we have just documented are interesting in their own right. However, what we do not know yet is whether they are driven by either systematic variation in the quality of jobs across Europe or are the result of differences in the economic structure of countries. In other words, as EU countries have very different economic structures, the overall levels of job quality would vary between countries even if each job had the same quality across Europe. This is a very important question for policy purposes because the same difference in the overall level of job quality between two countries has different implications if it simply results from the fact that their economic structures are different or if it is brought about by the same jobs being systematically better or worse in one of the two countries. We investigate this issue in depth in the next sections.

RESULTS

We investigate the relationship between the quality of jobs and labour market institutions in two stages. The first one involves using the information separately for each country and focuses on documenting the immigration gap in job quality, examining the importance of the composition effect and decomposing the differences between groups of workers for all the selected countries. The second one uses the pooled information from all countries and aimed at studying the impact of macro variables (the institutional framework) on the job quality of immigrants relative to natives.

Job quality differences between immigrants and natives

The description carried out in sub-section 3.3 has shown that, on average, the quality of employment of immigrant workers is lower compared with that of native workers. To delve into this result, our strategy consists of estimating a model of the determinants of job quality for each country. The basic specification of the empirical model is the following:

$$Y_{ijt} = \beta X_{ijt} + \delta \text{Immigr}_{ijt} + \alpha_t + u_{jt} + \varepsilon_{ijt} \quad (1)$$

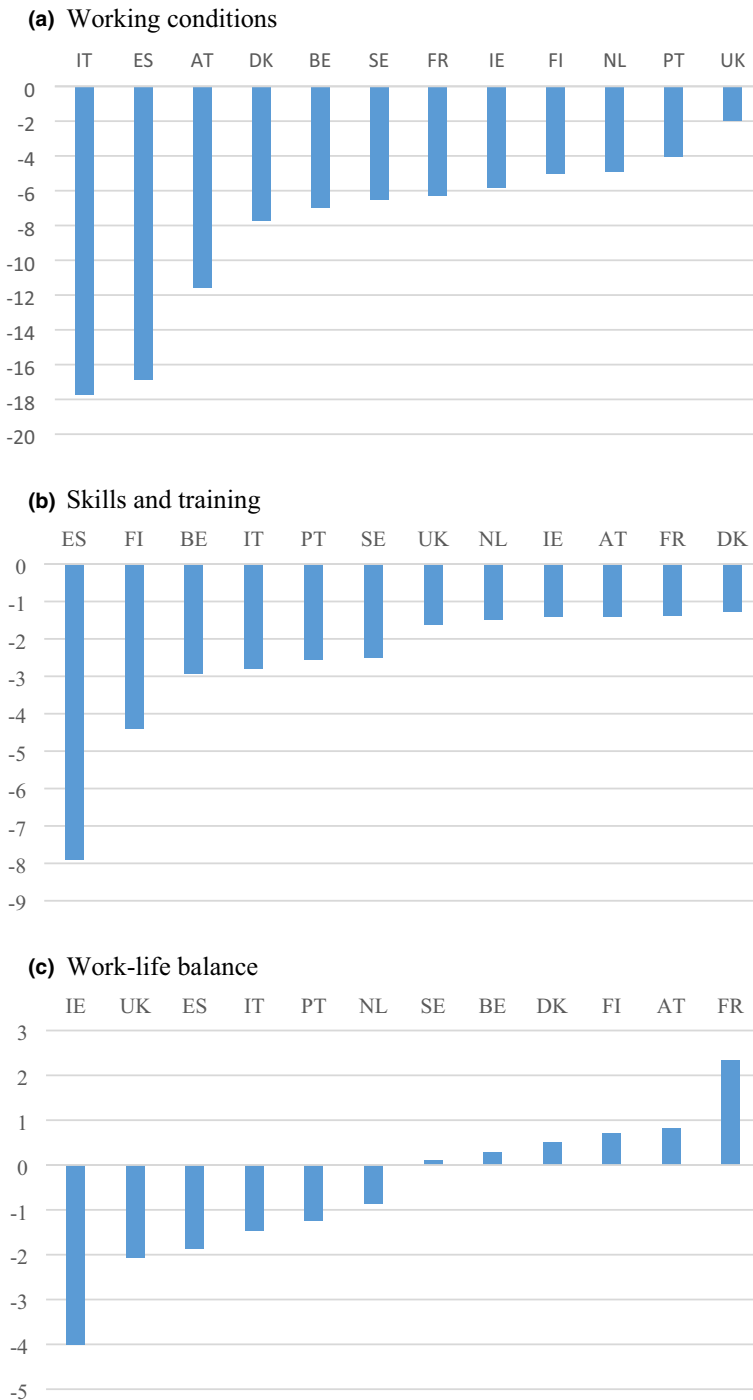


FIGURE 2 Differences between natives and immigrants in the three JQI dimensions, by country. Pooled EU-LFS (2005–2017). (a) Working conditions. (b) Skills and training. (c) Work-life balance

where subscripts i, j and t stand for individuals, countries and time respectively; Y_{ijt} is the JQI; X_{ijt} is a vector of explanatory variables (Table A2 of the Appendix 1 offers some descriptive statistics); $Immigr_{ijt}$ is an indicator for area of origin of immigrants; u_{jt} represents unobservable country-specific effects; and ε_{ijt} is the individual

error term. We pool by year, which allows controlling for the economic conditions at the time of the survey using dummy yearly variables (α_t). When equation (1) is estimated with all the countries jointly, we also pool the data by country, which allows for country-specific effects by including country dummies (α_j). The models are estimated by OLS.

In the model, a set of variables distinguishes individuals according to place of birth, instead of just including a dummy variable for all immigrants. Initially, the model only controls for some socio-demographic characteristics of the workers, that is gender, three dummies for age (15–29, 30–49 and 50–64) and three dummies for educational attainment (low, medium and high); and three dimensions of time, that is age, time since migration and calendar time. Thus, in addition to the age categories, we add a set of dummies for the years spent in the host country since the immigrant arrived (the 0 corresponds to the native-born) to control for the influence of timing of arrival on the quality of jobs held by the individual, and yearly dummies (a set of dichotomous year variables from 2005 to 2017) to take account of the business cycle and to control for unmeasured time shocks that may have an impact on job quality but we cannot observe.

Table 2 provides the results of the estimation of the model for each country separately. We only report the coefficients of the categories of the immigration variable. Full estimate results are offered as supplemental material. Based on specification (1), the results are similar between countries in the sense that, once other socio-demographic variables are controlled for, foreign workers taken together fare worse than native workers in terms of job quality. Furthermore, the results of the detailed nativity indicators show that all immigrant workers, regardless of their origin, fare worse than native workers within each country, although in some of them the immigrant groups with the worst job quality are different. For example, the cases of African and Asian immigrants in Finland and Sweden, and immigrants from NMS and other Europeans in Spain, Portugal and the UK, stand out.

These results agree with previous studies focusing on employment opportunities: new immigrants are penalized (although the gaps decrease with older migrants) and the differences between natives and non-natives cannot be explained by human capital variables, since controlling for education and other personal attributes reduces the immigration gap but does not remove it completely (Ballarino & Panichella, 2013).

The importance of the “composition effect”

Specification (2) adds work-related attributes: dummy variables for employment status (1 if permanent, 0 if temporary), working time (1 if full-time, 0 if part-time), occupation (six variables), industry affiliation (six variables) and firm size (five variables). By controlling for all these characteristics, we try to highlight the importance of the “composition effect” when measuring the quality of jobs. This means that the composition of employment may influence the quality outcomes, reflecting workers’ and, above all, jobs’ attributes rather than differences in the average employment quality.

Once we add the job-related controls, not only the fitting of the model improves substantially as expected but also the magnitude of the impact of immigration on job quality declines substantially, becoming null or even reversing for some groups (African and Asian workers), although small differences remain for others (other European and Central/South American workers). That is clearly visible in the case of Spain (also in Portugal with the same groups and in Sweden with “new” European and Central/South American workers). However, in the UK, only one immigrant group (workers coming from the “new” EU Member States) exhibits lower job quality than natives. Something similar happens in France (African workers). No statistically significant differences between immigrant groups and natives are observed in Belgium, Denmark, Finland, the Netherlands, Ireland and Italy.

As this occurs after taking account of worker, job and employer attributes, it would imply that the adjusted mean quality of jobs occupied by similar immigrant and native workers is very much the same (at least for some groups of foreigners), and that the observed differences are mainly due to the “composition effect,” at least for this latter set of European countries.

TABLE 2 Estimate results of the regressions on the JQI, EU-LFS (2005–2017)

	Origin=NMS	Origin=Other European	Origin=Africa	Origin=Asia	Origin=South/Central America	Constant	R-squared / Observat.
Austria (1)	-5.312 [0.561]***	-4.570 [0.563]***	-5.207 [0.925]***	-4.620 [0.901]***	-2.666 [1.352]**	55.741 [0.229]***	0.139 895,673
Austria (2)	-0.973 [0.429]**	-0.004 [0.432]	-1.197 [0.705]*	-1.010 [0.687]	-0.314 [1.030]	69.964 [0.513]***	0.502 895,673
Belgium (1)	-3.729 [0.634]***	-2.735 [0.756]***	-4.849 [0.548]***	-3.723 [0.895]***	-4.143 [1.093]***	58.276 [0.206]***	0.147 396,983
Belgium (2)	-0.026 [0.523]	0.852 [0.622]	-0.066 [0.452]	0.373 [0.737]	0.191 [0.899]	69.308 [0.708]***	0.425 396,983
Denmark (1)	-4.425 [1.237]***	-1.797 [1.199]	-3.943 [1.231]***	-5.315 [1.185]***	-2.339 [2.307]	59.706 [0.236]***	0.134 553,366
Denmark (2)	-0.497 [1.028]	0.028 [0.995]	0.137 [1.022]	-0.650 [0.985]	0.187 [1.905]	69.890 [0.545]***	0.409 553,366
Spain (1)	-11.067 [0.424]***	-11.293 [0.600]***	-7.575 [0.464]***	-3.191 [0.657]***	-7.936 [0.390]***	53.324 [0.118]***	0.235 313,143
Spain (2)	-2.939 [0.319]***	-1.823 [0.450]***	0.487 [0.351]	1.789 [0.495]***	-1.498 [0.291]***	73.194 [0.189]***	0.605 313,143
Finland (1)	-5.796 [1.583]***	-6.926 [1.437]***	-9.849 [1.800]***	-8.031 [1.694]***	-3.531 [3.340]	57.202 [0.297]***	0.216 133,958
Finland (2)	-1.819 [1.259]	-1.273 [1.147]	-2.201 [1.488]	-2.076 [1.384]	-1.251 [2.662]	73.605 [0.580]***	0.531 133,958
France (1)	-2.416 [0.640]***	-0.152 [0.574]	-5.140 [0.369]***	-2.320 [0.647]***	-3.572 [0.691]***	55.917 [0.090]***	0.121 539,339
France (2)	-0.081 [0.521]	0.351 [0.464]	-0.823 [0.300]***	0.581 [0.526]	-0.945 [0.558]*	66.768 [0.215]***	0.440 539,339
Ireland (1)	-5.381 [0.570]***	-4.001 [1.438]***	-2.936 [1.027]***	-1.746 [0.759]**	-3.533 [1.262]***	57.064 [0.322]***	0.174 735,959
Ireland (2)	-0.922 [0.489]*	0.105 [1.217]	0.066 [0.883]	0.462 [0.644]	1.004 [1.103]	66.483 [0.757]***	0.465 735,959

(Continues)

TABLE 2 (Continued)

	Origin=NMS	Origin=Other European	Origin=Africa	Origin=Asia	Origin=South/Central America	Constant	R-squared / Observat.
Italy (1)	-5.006 [0.590]***	-4.407 [0.598]***	-2.845 [0.622]***	-4.327 [0.622]***	-5.378 [0.636]***	55.807 [0.092]***	0.206 1,871,618
Italy (2)	0.076 [0.397]	0.343 [0.402]	1.063 [0.418]**	0.621 [0.419]	-0.209 [0.428]	72.120 [0.133]***	0.642 1,871,618
Netherlands (1)	-4.289 [0.939]***	-3.493 [1.008]***	-4.970 [0.865]***	-5.264 [1.012]***	-3.524 [0.914]**	54.660 [0.172]***	0.173 422,146
Netherlands (2)	-0.118 [0.826]	-0.605 [0.879]	0.297 [0.768]	-0.185 [0.889]	-0.173 [0.800]	65.687 [0.856]***	0.458 422,146
Portugal (1)	-8.609 [1.442]***	-11.862 [1.279]***	-4.958 [1.172]***	-5.863 [2.477]**	-6.648 [1.125]***	56.860 [0.183]***	0.214 595,922
Portugal (2)	-2.717 [1.082]**	-4.696 [0.960]***	-0.531 [0.879]	0.233 [1.857]	-1.495 [0.844]*	69.771 [0.331]***	0.559 595,922
Sweden (1)	-6.315 [0.886]***	-3.950 [0.814]***	-7.659 [0.693]***	-7.208 [0.806]***	-6.731 [1.139]***	54.218 [0.241]***	0.202 1,587,028
Sweden (2)	-2.263 [0.734]***	-0.627 [0.673]	-1.158 [0.581]**	-1.220 [0.672]*	-1.123 [0.950]	67.893 [0.568]***	0.478 1,587,028
UK (1)	-7.059 [0.228]***	-2.634 [0.515]***	-2.233 [0.268]***	-2.199 [0.235]***	-1.715 [0.456]***	59.028 [0.095]***	0.117 341,338
UK (2)	-1.177 [0.191]***	-0.635 [0.429]	0.416 [0.224]*	0.689 [0.196]***	0.754 [0.379]**	66.031 [0.274]***	0.396 341,338
All – Pooled (1)	-6.929 [0.140]***	-5.386 [0.178]***	-4.892 [0.151]***	-3.278 [0.162]***	-7.215 [0.151]***	56.748 [0.070]***	0.161 8,386,473
All – Pooled (2)	-1.589 [0.112]***	-0.658 [0.141]***	0.052 [0.121]	0.514 [0.129]***	-1.781 [0.121]**	68.943 [0.095]***	0.485 8,386,473

Note: Each row corresponds to the estimation of an independent model, which includes controls for origin, gender, age, education, time since migration and years (model (1)), plus employment status, working time, occupation, industry affiliation and firm size (model (2)). The models with all countries (All – Pooled) also include country fixed effects. Robust standard errors appear in brackets. Significance level: ** $p < 0.01$, * $p < 0.05$.

Moreover, the variable capturing the time since migration shows that the newest immigrants tend to hold worse jobs, if one only controls for demographic characteristics: the coefficients of the categories of this variable are negative and the most negative one corresponds to the last individuals who arrived in the host country. However, including job-related attributes reduce the magnitude of the effects and somehow reverses its impact. This result would indicate that years spent in the country do not contribute to improve substantially the quality of jobs of foreigners when compared to similar natives and reduce fully the differences between them. This happens more intensely in Spain, Italy, Austria, Ireland and partially in the UK. No differences exist among groups by years since migration in the rest of the countries.

As a complement of the previous analysis, we use decomposition methods to investigate the extent to which the composition effect explains the immigration gap in the quality of jobs observed across European countries. Figure 3 displays the average difference in job quality between natives and immigrants and the contribution due to “characteristics” and “returns” estimated by means of an Oaxaca–Blinder decomposition.⁴

The results suggest that a relevant share of the immigration gap observed in job quality can be explained by the differences in personal and, above all, employment characteristics (as we have seen above) between both groups of workers. Overall, 85.8% of the mean differential can be attributed to this composition effect. However, notable differences across countries are apparent. There is a group of countries (the Netherlands, Denmark, France, Finland and Sweden) where the contribution of the explained component is above the overall mean and close to 100%. Most of these countries show small JQI differentials. On the contrary, the unexplained component tends to be larger not only for those countries with the largest JQI differentials (Spain and Italy) but also for other countries with smaller gaps (Portugal, Ireland and the UK).

The impact of institutions

Now we move from a country-by-country analysis to another in which we use information from the pool of selected countries. This will allow us to consider macro variables and examine whether the institutional framework is relevant when explaining job quality differentials between immigrants and natives.

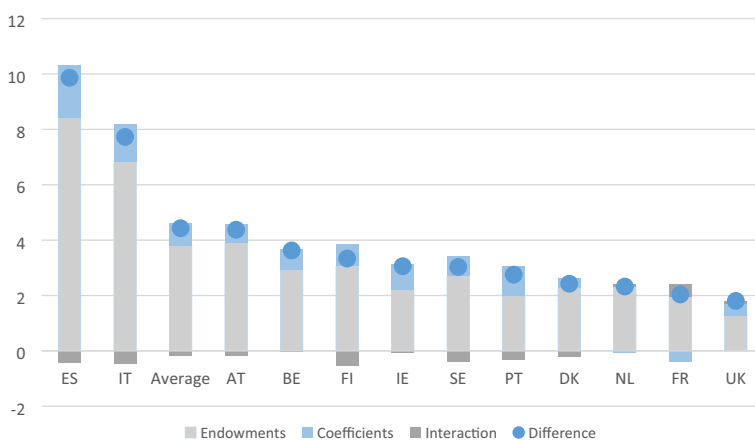


FIGURE 3 JQI differentials between natives and immigrants and contributions of the explained and unexplained parts by country: Oaxaca–Blinder decomposition on the mean. EU-LFS (2005–2017). Note: Each column corresponds to the estimation of an independent model for each country. Only the column “Average” uses the pooled data for all countries. Control variables are, gender, age, education, time since migration, employment status, working time, occupation, industry affiliation, firm size and years

TABLE 3 Estimate results of the regressions on the JQI (coefficients of the immigration categories and their interaction with the institutional indicators). Pooled EU-LFS (2005–2017)

	Coord. of bargaining	Central. of bargaining	Coverage rate	Minimum wage	EPL	MIPEX index
Origin=NMS	-1.898 [0.124]**	-1.310 [0.130]**	-1.780 [0.143]**	-2.020 [0.045]**	-1.088 [0.164]**	-6.522 [0.315]**
Origin=Other European	-1.816 [0.207]**	-1.469 [0.242]**	-2.794 [0.326]**	-1.482 [0.038]**	0.082 [0.314]	-2.924 [0.237]**
Origin=Africa	0.190 [0.096]*	0.108 [0.127]	-0.076 [0.147]	-1.167 [0.057]**	0.168 [0.135]	-2.191 [0.349]**
Origin=Asia	0.434 [0.110]**	0.576 [0.129]**	0.347 [0.131]**	-1.720 [0.057]**	0.829 [0.154]**	-3.332 [0.385]**
Origin=South/ Central America	-1.141 [0.211]**	0.051 [0.287]	-1.244 [0.315]**	-2.844 [0.083]**	-1.601 [0.241]**	-6.991 [0.338]**
Institution	0.036 [0.019]	0.586 [0.012]**	0.008 [0.002]**	-0.507 [0.007]**	3.462 [0.037]**	0.118 [0.008]**
NMS*Institution	-0.072 [0.038]	-0.383 [0.053]**	-0.005 [0.002]*	-0.020 [0.017]	-0.488 [0.068]**	0.063 [0.005]**
Other Euro*Institution	0.257 [0.057]**	0.199 [0.094]*	0.022 [0.004]**	0.155 [0.019]**	-0.438 [0.119]**	0.030 [0.004]**
Africa*Institution	-0.222 [0.031]**	-0.200 [0.050]**	-0.003 [0.002]	0.145 [0.011]**	-0.217 [0.052]**	0.026 [0.005]**
Asia*Institution	-0.367 [0.035]**	-0.520 [0.058]**	-0.012 [0.002]**	0.281 [0.015]**	-0.623 [0.068]**	0.042 [0.005]**
South/Central America*Institution	-0.305 [0.069]**	-0.893 [0.121]**	-0.010 [0.004]*	0.181 [0.019]**	-0.173 [0.090]	0.081 [0.005]**
Constant	68.593 [0.099]**	67.352 [0.066]**	67.910 [0.223]**	69.582 [0.059]**	60.327 [0.108]**	69.582 [0.059]**
Observations	8,386,473	8,386,473	8,386,473	8,386,473	8,386,473	5,772,310
R-squared	0.488	0.488	0.488	0.488	0.489	0.476

Note: Each column corresponds to the estimation of an independent model, which includes controls for Origin, gender, age, education, time since migration and years (model (1)), plus employment status, working time, occupation, industry affiliation and firm size (model (2)). The number of observations in column "MIPEX index" is lower because the estimation refers to period 2007–2014. Robust standard errors appear in brackets. Significance level: ** $p < 0.01$, * $p < 0.05$.

First, we estimate [equation \(1\)](#) after pooling the data by year and by country. This implies including country-specific effects (α_i) in the estimation of the model. The results are provided in the last two rows of [Table 2](#). They show that the job quality of immigrant groups is lower than that of natives (this is especially the case for those who come from the “new” EU Member States, Central/South America and, above all, Africa, who exhibit the poorest quality of jobs), and that this differential tends to vanish if one takes account of the composition of employment.

In this estimation setting, one may interpret the statistical significance of the country-specific effects as a sign of the presence of specific national factors (institutional and macroeconomic, basically) affecting the quality of jobs. Thus, using Austria as the reference country, better job quality can be observed, in this order, for Denmark, Italy, Sweden and the UK, and worse job quality, in this order, for Spain, Finland, France, Portugal and Ireland, if we only condition on personal characteristics. However, differences across countries tend to diminish once we add job-related attributes, but they do not vanish. In this case, only France and Ireland fare worse than Austria. This result would again point to large composition effects when one compares the quality of jobs among a group of countries.

At the same time, the findings derived from the decomposition analysis carried out previously also provide valuable information, since the results point to the importance of institutional contexts influencing the employment quality of immigrants, something that occurs mainly through the unexplained component. However, the explained component may also be influenced by the labour market institutions and the migration policy, since they can affect the characteristics of the immigrants and the sending country structure of immigrants through, for instance, the generosity of the rules for labour market migration relative to those for family migration, the compression of the wage distribution in the host country or the generosity of the welfare state. All in all, this implies that institutions matter for immigrant outcomes.

To analyse the impact of the institutional setting on job quality differentials in more detail, we estimate an extended specification of [equation \(1\)](#) that adds indicators of the labour market institutions (which substitute for the country dummies) and interactions between the immigrant dummies and the institutional variables. The extended pooled empirical model now takes the following form:

$$Y_{ijt} = \beta X_{ijt} + \delta_0 \text{Immigr}_{ijt} + \delta_1 \text{Inst}_{jt} + \delta_2 \text{Immigr}_{ijt} \text{Inst}_{jt} + \alpha_t + u_{jt} + \varepsilon_{ijt} \quad (2)$$

Where Inst_{jt} is a vector of variables capturing institutional attributes of the selected economies under analysis. This specification is designed essentially to analyse the degree to which the differential job quality of native and immigrant workers varies across the institutional frameworks of European countries. As explained in sub-section [3.2](#), we use indicators on different institutions: the collective bargaining system; the minimum wage system; the union power; the employment protection legislation; and other policies influencing the mobility and advancement of immigrants. In the estimation of the models, we lag these indicators by one period to deal with the fact that institutional reforms take time to become effective, thus reducing the potential endogeneity problem.

To obtain the effect that a country-level factor produces on the individual-level outcome, the institutional variables have interacted with the immigration groups. This strategy allows us to estimate the effects of institutional settings on the employment quality gap between native and immigrant workers. The coefficients for the immigrant dummy (δ_0) give us the relative job quality of immigrant workers as compared to native workers (the reference category), once personal and job attributes (the “composition effect”) is controlled for. Furthermore, the coefficient for the institutional indicator (δ_1) measures the impact of the corresponding institution for natives, whereas the interaction between the immigrant dummy and the institution dummy (δ_2) measures the differential effect of the latter for the immigrant groups compared with the natives.

The estimation results are reported in [Table 3](#). Each column corresponds to an OLS regression in which only one institution is included at a time. For the sake of brevity, we only provide the coefficients of the corresponding institution, the immigration dummies and the interactions.

The effects of the immigration dummies mirror those reported in [Table 2](#). In general, regardless of the institutional indicator included in the regression, immigrants from the new EU Member States, other European non-EU countries and Central/South America countries fare worse than native workers, while African and Asian workers fare similarly or slightly better. The only exceptions correspond to the estimates that include the indicators on the system of minimum wage and the migration policies, which bring about worse results for all categories of foreigners when compared to the rest of estimations.

Focusing attention on the interactions between the immigration groups and the institutional indicators, we can examine whether the job quality of immigrants and native-born workers is affected differently by the institutional setting. The results suggest that the institutions have an influence on the immigration gap once compositional differences are taken into account.

This outcome is clearly seen when one looks at the coefficients of the collective bargaining system: the higher the degree of coordination and centralization, the higher the immigration gap in employment quality. This implies that native workers significantly fare better in job quality and immigrant workers fare worse as coordination and centralization increase (the only exception is for the ones from other European non-EU countries). The union power (measured by the coverage rate) and the strictness for firing regular workers (measured by the OECD indicator) bring about the same result. Therefore, all these institutions have similar impacts, implying that countries with more coordinated and centralized bargaining, with more extended presence and extension of unions and collective agreements, and with stricter employment protection legislation for regular jobs, favour the employment quality of natives over that of immigrants. These results are in line with the evidence provided by previous studies (Guzi et al., 2015; Huber, 2015).

There is only one institution (the system of minimum wage) whose influence on the quality of jobs is different for natives and non-natives. In this case, the higher the influence of the government on the minimum wage system, the lower the immigration gap. The reduction in the gap is due to the reduction of job quality for native workers and the rise of job quality for all categories of immigrant workers with more intervention. This differential effect of the institutional setting might suggest that, when the government intervenes and minimum wages are equally enforced to regular and atypical workers, minimum wages are more likely to improve the earnings and working conditions of atypical workers (among who the immigrants are over-represented), something than can help reducing the wage and quality gap between natives and non-natives.

Furthermore, the results show that the job quality of all immigrant groups improves with the overall MIPEX index. As this index measures integration policies of countries in different areas, this finding suggests that policies that favour labour mobility, recognition of qualification, long-term residence and anti-discrimination practices may bring about positive outcomes, not only in labour market participation and integration but also in terms of employment quality.⁵

Finally, two additional analyses that complement the previous one have been carried out. On the one hand, we have estimated a specification of [equation \(2\)](#) in which the dummies of immigrant groups are replaced by other dummies that divide non-natives among those who have been in the host country for more or less years in order to interact with the indicators of the institutions. The results indicate that the effects of the latter are very similar for both categories of immigrants, reflecting again that the institutions that improve the quality of jobs of non-natives are the minimum wage system and integration policies.

On the other hand, the models presented in [Table 3](#) have been estimated separately for the three components of the JQI. The results suggest that the institutions affect the first dimension (working conditions, which is the one that weighs the most on the index) in almost the same way as the overall index (the only difference refers to the negative impact of integration policies), but their effects differ when the second dimension (skills and training) and, especially, the third dimension (work–life balance) are examined. For instance, in the latter case, our results indicate that the institutional variables related to the system of wage bargaining change signs, so that countries with more coordinated and centralized bargaining, and with more presence of unions, favour the work–life balance of non-natives over that of natives. Regarding the different groups of immigrants, those who come from Africa,

Asia and South/Central America are the least favoured (the most negatively affected) by the collective bargaining system in the third (second) component. Moreover, all immigrant groups almost without exception benefit from the positive effects of integration policies on the three components that make up the index.

CONCLUSIONS AND DISCUSSION

This article compares the job quality of native and non-native workers across several European countries and relates the differences between both groups to the institutional frameworks prevailing in those countries. For that, a job quality index has been measured using microdata from the EU-LFS and aggregate indicators coming from different sources have been used to approximate the institutional settings.

First, our findings suggest that some immigrant groups fare worse than natives. This result confirms our H1. In general, those who come from Central and South America and the “new” EU Member States exhibit the poorest quality of jobs, although this does not happen in all the countries. However, our findings also point to the importance of the “composition effect”: once we add job-related controls to the estimation of a model on the quality of jobs, the magnitude of the impact of immigration on job quality declines substantially, becoming null or even reversing for some groups, although it persists for others. As this occurs after taking account of worker and, above all, job and employer attributes, it implies that a large portion of the observed differences between native-born and immigrant workers is due to the differential composition of employment between both groups of workers.

Our findings from the decomposition techniques corroborate the above, although notable differences across countries are apparent. For some of them (the Netherlands, Denmark, France, Finland and Sweden) the contribution of the explained component is very large. Moreover, the explained component accounts for most of the job quality difference between natives and non-natives and tends to be larger in countries where the immigration gap is lower. All these findings tend to confirm our H2. However, one cannot exclude the notion that the mean quality of jobs occupied by similar native and non-native workers is different for certain groups, as previous studies focusing on specific working conditions indicators have highlighted.

Second, we have analysed the impact of institutional factors on the quality of jobs and the gap between natives and non-natives. In our estimations, the differentials in job quality across countries measured by the country-specific effects tend to diminish, once we add job-related attributes. This result would point to large composition effects when one compares the job quality among a group of countries. Moreover, after replacing those dummies with indicators of labour market institutions and migrant policies, we find that the institutional framework affects the immigration gap in job quality, with some institutions working out well for insiders. This result confirms our H3.

In particular, countries with more coordinated and centralized bargaining, with more extended presence and extension of unions and collective agreements, and with stricter employment protection legislation for regular jobs, help native workers to attain a better job quality than immigrant workers. This result agrees with those obtained by the limited literature that studies the relationship between institutions and labour market outcomes of natives and immigrants. On the contrary, more governmental intervention in the system of minimum wage and more inclusive migrant integration policies favours the employment quality of immigrant workers (particularly, the component most favourably influenced by the latter two institutions is that of work–life balance). This finding is completely novel since no previous study had considered the potential impact of minimum wages on job quality. All these results point to the notion that, in general, the institutional setting of CMEs, in the terminology of the VoC approach, tends to favour the job quality of native workers over that of foreign workers, while this may not be the case for countries that are representative of other institutional approaches (the “liberal” one—the UK, and the “flexicurity” one—Denmark).

To conclude, our results suggest that the impact of institutions on the job quality gap between natives and non-natives is not straightforward and that, when one looks at policy intervention, cross-country comparisons need not translate into identical results. Thus, integration policies and institutional changes should be adapted to the specific national environments. In this sense, the impact of the institutional framework on the job quality differentials we have

analysed is crucial from the policy perspective. On the one hand, the fact that large portions of the gap in job quality can be explained by differences between natives and immigrants in observed characteristics implies that workers obtain disparate outcomes due to the fact that they have diverging attributes relevant to the labour market. In this case, the role of integration policy would be to reduce such gaps, by improving the immigrants' knowledge of the receiving country's language or by providing equal access to the education system. On the other hand, the unexplained component means that workers with identical labour market attributes are being unequally treated. Then, the tools for addressing this problem would be antidiscrimination and equal treatment policies.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare that are relevant to the content of this article.

PEER REVIEW

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DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analysed in this study.

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ENDNOTES

¹See *inter alia* Altonji and Card (1991), Venturini (1999) and Card (2005) for the first result and Borjas et al. (2008) and Ottaviano and Peri (2012) for the second.

²The database also provides information on the nationality of individuals. We have used the country of birth to define someone as native or non-native, in the idea that this variable more adequately includes immigrants. The correlation between both variables that measure immigration is high, since in all EU Member States most people with foreign nationality have been born outside the country (and vice versa), although in some Member States there is a relatively large group of "naturalized immigrants," that is, people who were born outside the borders of the country but have obtained citizenship.

³These four dimensions are in line with the categories that Davoine et al. (2008) and Eurofound (2002) suggest, following the proposal of the European Commission (2001) as well as Eurofound (2012) and Muñoz de Bustillo et al. (2011), although they are grouped in a different way.

⁴The Oaxaca–Blinder (O-A) method decomposes mean outcome differentials between two groups into explanatory determinants and an unexplained part (Blinder, 1973; Oaxaca, 1973). These differences are characterized as functions of differences in characteristics ("composition effect") and differences in coefficients associated with those characteristics ("return effect"). In its original setting, the decomposition technique uses a wage equation. We apply "Recentered Influence Function" (RIF), a generalization of the O-A technique that can be used at other points of the outcome distribution. This methodology is based on the estimation of a regression of the dependent variable, in our case the JQI, which is replaced by a transformation of this, the RIF, to subsequently develop the standard O-A decomposition based on the results of the regression. In its simplest version, the expected value of the RIF can be specified from a linear approximation of the explanatory variables considered, thus allowing its estimation through OLS (see Fortin et al., 2011; Rios-Avila, 2020). We have estimated an independent model for each country (and one with pooled data for all countries), using as controls a set of personal and job-related variables (see note to Figure 3). The reference job quality structure to accomplish the decomposition is that of natives.

⁵We have also estimated the regressions shown in Table 3 without controlling for personal and job-related characteristics to check to what extent the results vary depending on whether these variables are included or not. The outcome is similar to what we observe in Table 2: the coefficients of the variables of interest (in this case, the corresponding institution, the immigration dummies and the interactions) from regressions without controls are larger than the ones from regressions with controls. This differential reflects the “composition effect.” Specifically, the impacts of institutions on each group of immigrants, although larger in magnitude, are qualitatively the same (the only exception is related to the effects of coordination and centralization of the wage bargaining on immigrants from other European non-EU countries, which become negative –as is the case for the rest of immigrants- when no other controls are included).

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APPENDIX 1

TABLE A1 Structure of the job quality index

Dimension	Sub-component
WC: Working conditions (44.5%)	WC1 (11.1%): Working part-time by reason: not having found a full-time job (0); other reasons (50); not wanting a full-time job (100).
	WC2 (11.1%): Usually working more hours than agreed or contained in the labour contract or the collective agreement: more hours (0); otherwise (100).
	WC3 (11.1%): Wishing to work more or fewer hours than currently: more or fewer hours (0); same number of hours (100).
	WC4 (11.1%): Contractual stability: fixed-term contract (involuntary reasons) (0); fixed-term contract (voluntary reason: not wanting a permanent contract) (30); permanent contract (100).
ST: Skills and training (33.3%)	ST1 (11.1%): Having undertaken on-the-job training activities funded (totally or partially) by the company in the four weeks prior to the interview: no (0); yes, but not funded by the company (33); yes, and funded by the company (100).
	ST2 (11.1%): Level of qualification required by the job: occupational group 9 (0); groups 4–8 (33); group 3 (67); groups 1–2 (100).
	ST3 (11.1%): Skills mismatch: difference between the skills required by the job and those possessed by the worker: over-qualification/sub-employment (0); otherwise (100).
WLB: Work–life balance (22.2%)	WLB1 (11.1%): Regular weekly working hours in the main job: +48 (0); 43–48 (25); 38–42 (50); 21–37 (75); 1–20 (100).
	WLB2 (11.1%): Average of the following five variables:
	Number of times in the last four weeks that the working day ended any time between 20:30 and 24:00: more than half of the days worked (0); occasionally (50); never (100).
	Number of times in the last four weeks that the working day ended after 24:00: more than half of the days worked (0); occasionally (50); never (100).
	Number of times in the last four weeks that the individual worked on a Saturday: two or more (0); one (50); none (100).
	Number of times in the last four weeks that the individual worked on a Sunday: two or more (0); one (50); none (100).
	Working in a shift system: yes (0); no (100).

TABLE A2 Descriptive statistics. Pooled EU-LFS (2005–2017)

	Native born	Immigrant	Native born	Immigrant
	Mean	Mean	SD	SD
Gender				
Women	0.4802	0.4780	0.4996	0.4995
Age				
16–29	0.2263	0.2051	0.4184	0.4038
30–49	0.5226	0.5969	0.4995	0.4905
50–64	0.2511	0.1981	0.4336	0.3985
Level of education				
Primary	0.2514	0.3004	0.4996	0.4995
Secondary	0.4189	0.3793	0.4934	0.4852
Tertiary	0.3297	0.3203	0.4701	0.4666
Industry affiliation				
Agriculture	0.0138	0.0247	0.1168	0.1552
Manufacturing	0.1650	0.1424	0.3712	0.3494
Construction	0.0612	0.0782	0.2397	0.2685
Traditional Services	0.1791	0.2103	0.3835	0.4075
ICT Services	0.0428	0.0375	0.2023	0.1900
Other Services	0.5381	0.5069	0.4985	0.5000
Occupation				
White-collar high-skilled occ.	0.4187	0.2966	0.4933	0.4568
White-collar medium-skilled occ.	0.1296	0.0768	0.3358	0.2662
White-collar low-skilled occ.	0.1684	0.1948	0.3742	0.3960
Blue-collar high-skilled occ.	0.1103	0.1244	0.3133	0.3301
Blue-collar medium-skilled occ.	0.0762	0.0808	0.2653	0.2725
Blue-collar low-skilled occ.	0.0968	0.2266	0.2957	0.4186
Firm size				
1–10 employees	0.1826	0.2586	0.3864	0.4379
11–19 employees	0.2752	0.2461	0.4466	0.4307
20–49 employees	0.4456	0.3963	0.4970	0.4891
50 employees or more	0.0505	0.0470	0.2190	0.2116
Don't know	0.0461	0.0521	0.2097	0.2222
Working day				
Full-time	0.7864	0.7652	0.4098	0.4239
Part-time	0.2136	0.2348	0.4098	0.4239
Type of labour contract				
Permanent	0.8649	0.8086	0.3418	0.3934
Fixed term	0.1351	0.1914	0.3418	0.3934
Observations	7,680,497	705,976		

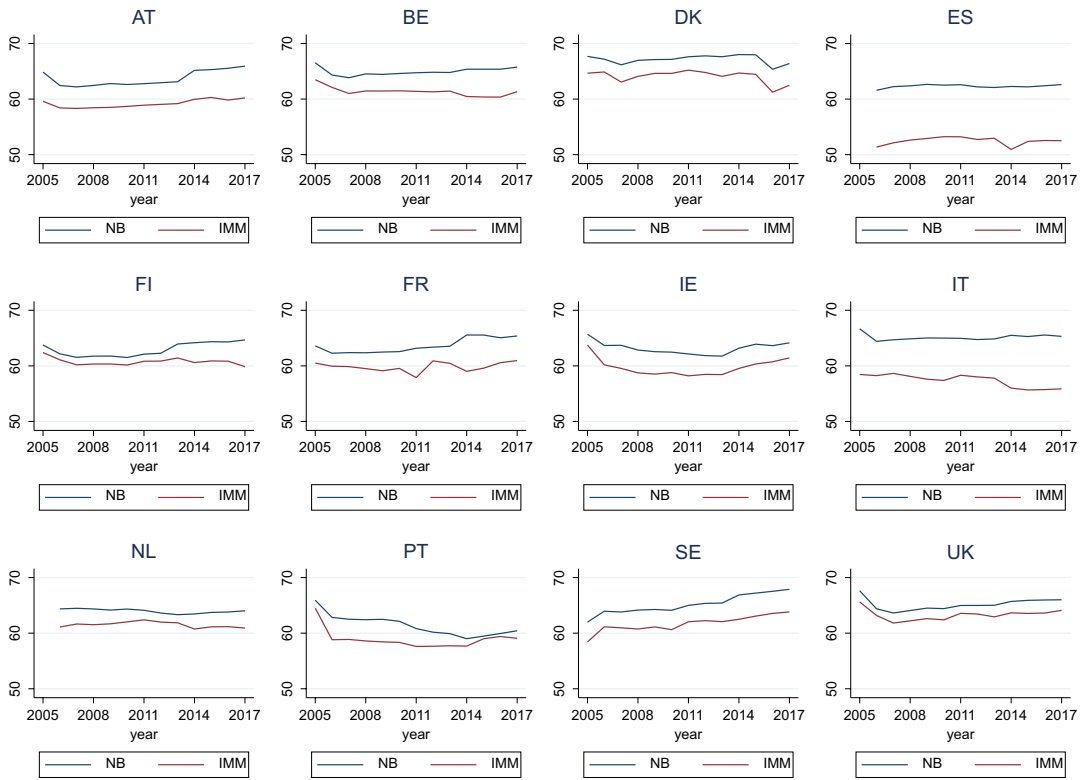


FIGURE A1 Evolution of the JQI by origin and country. EU-LFS (2005–2017)

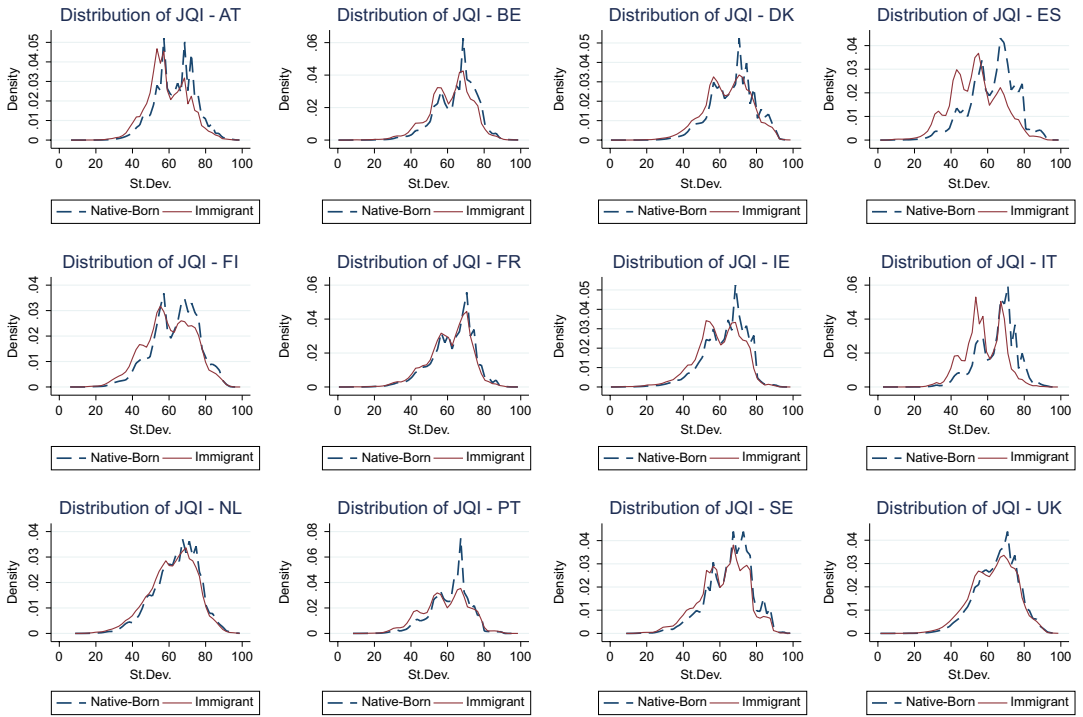


FIGURE A2 Distribution of the JQI by origin and country. EU-LFS (2005-2017)