

Stuck in a time warp: The Great Recession and the Socio-occupational Integration of Migrants in Spain

Juan Ramón Jiménez-García^{a*} and Antonina Levatino^b

^aDepartment of Political and Social Sciences, Universitat Pompeu Fabra, Barcelona, Spain;

^bDepartment of Sociology, Universitat Autònoma de Barcelona, Bellaterra, Spain

Juan Ramón Jiménez-García, *corresponding author

juanramon.jimenez@upf.edu

ORCID:0000-0002-82521592

Juan Ramón Jiménez-García is a PhD candidate at the Pompeu Fabra University (Barcelona). He holds a BA in Political and Administration Sciences (Universidad Pablo de Olavide, Sevilla) and a MA in Public Management (Universidad de Granada). He is a member of the DEMOSOC Research Group, CEPAIM Foundation and the cooperative society Cámara Cívica. His main research areas are: social stratification, inequalities, stereotypes and discrimination in the labour market.

Antonina Levatino

ORCID: 0000-0001-7245-3592; Researcher ID (Web of Science): L-1863-2015

Antonina Levatino holds a PhD in Political and Social Sciences from the Universitat Pompeu Fabra (Barcelona) and is currently a postdoctoral researcher at the Department of Sociology of the Universitat Autònoma de Barcelona. During her academic career, Antonina worked in several international research projects on migration and was a member of the DEMOSOC and GRITIM Research Groups. Antonina is currently a member of the International Observatory on Academic Mobilities “MobÉlites” and of the GEPS (Globalisation, Education and Social Policies) Research Group. Her research focuses, on the one hand, on the link between higher education, student mobility and labour migration, and, on the other, on recent educational reforms.

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This article examines the socio-occupational integration of the immigrant population in Spain for a time span that, for the first time, includes the post-crisis period. Using the Spanish Labour Force Survey and conducting a socio-occupational analysis, we predict the probability a migrant own to be employed in one class over another in three periods: before, during and after the crisis. Our main research questions is: How were workers allocated in the Spanish labour market according to their gender and origin before, during and after the Great Recession? The results show how the crisis seems to have been harsher for men workers. They give support to the ethnostratification theory, showing a very unequal distribution of immigrants in the socio-occupational structure according to their origin. While immigrants from richer countries are better located in the occupational structure, those from poorer countries are overrepresented in the lower socio-occupational classes. Although in certain cases, the post-crisis period has meant a bettering in the occupational condition of some groups, the situation is quite stable for other migrants, that seems to be stuck in a time warp.

Keywords: socio-occupational integration; immigrant population; labour market; the Great Recession; Spain

Introduction

The consequences of the Great Recession on the Spanish labour market have aroused strong interest in the academic sphere, especially regarding its possible impact on the occupational and social situation of the most vulnerable groups. As some previous investigations have shown (see, e.g., Kogan 2004), the immigrant population is very dependent on economic cycles and, therefore, may constitute one of the groups most affected by economic recessions. Given such evidence, it is not surprising that a large amount of research has focused on the impact of the recent economic crisis of 2008 on the employment situation of immigrants in Spain (Cebolla-Boado, Miyar-Busto, and Muñoz-Comet 2015; Garrido, Miyar Busto, and Muñoz-Comet, 2010; Muñoz-Comet 2011). These investigations have shown that immigrants have generally been more at risk of losing their jobs than natives. However, the crisis has not affected all immigrants uniformly. Its effects seem to vary substantially according to nationality (Cebolla-Boado, Miyar-Busto, and Muñoz-Comet 2015) and

gender (Muñoz-Comet 2011; Arranz, Carrasco, and Massó 2017). This last point seems particularly interesting, since surprisingly, immigrant women seem to have endured the crisis better than men, especially if the employment rate is taken into account (Gil-Alonso y Vidal-Coso 2015). More recently, Jiménez-García (2018) found higher probabilities of access the labour market by people with foreign nationality compared to natives during the crisis. The mechanisms behind this greater employability of immigrants compared to their native counterparts are not yet clear and defined. Most probably, the explanation is related to the type of jobs occupied by immigrants, especially by women, who generally have greater precariousness and fewer opportunities for job promotion (Bernardi and Garrido 2008). The segmentation of the labour market would allow immigrants to maintain greater employability in particularly precarious occupations in which there are no native workers (Martínez-Martín and Prior-Ruiz 2011). Although the socio-labour segmentation seems to play a key role in explaining some of the results already found by some investigations, to date there is no evidence of the existence of any study that has analysed the socio-occupational integration of immigrants in the Spanish labour market in a time span that includes the post-crisis period.

This study aims to address this gap by examining for the first time this phenomenon not only for the period preceding the crisis – 2006 and 2008 - or for the period of crisis -2010-2012 -, but also including the post-crisis period - after 2012-. To do this, we use microdata from the Spanish Labour Force Survey for the period 2006-2016 (INE 2018) and we conduct, for the first time to our knowledge, a socio-occupational class analysis that aims at predicting the probability to be located in one class over another¹. Our research questions are: In what socio-occupational classes were the immigrants in Spain located compared to the native ones before, during and after the Great Recession? In what way do people of the same origin or of the same gender tend to concentrate in certain socio-occupational classes? And, how did this concentration evolve in the period analysed?

¹ It should be note that, according to the Spanish Law on Foreigners that allow migrants to live in Spain only if they are employed in the labour market and to the rumours about migrants in host societies when they do not work (Jiménez-García y Jiménez Vicioso, 2019), labour market integration means social, political and legal integration

The Spanish case is relevant for various reasons. Firstly, Spain has gone from being a population-sending country to a population-receiving country in a very short period of time (Freeman, 1995). In less than 30 years, it has gone from having an immigrant population of 500.000 in 1995 to having more than 5 million in 2018 (INE 2018). Much of the population entry has been driven by the high demand for labour at specific moments. These entries included a high volume of undocumented migration (Finotelli and Ponzo 2018, 6) whose integration is essential to guarantee compliance with minimum labour and social rights. Secondly, Spain has been one of the countries most affected by the crisis in Europe and the OECD (Aristegui et al. 2017). The emergence of the crisis in Spain coincided with the period of greatest reception of foreign population. The third reason is related to the fact that Spain does not currently have a program aiming at favouring the inclusion and integration of the foreign population (Finotelli and Ponzo 2018; Ribas-Mateos 2004). Knowing the degree of integration of the immigrant population in the socio-occupational structure is essential to design public policies that could favour a more inclusive and efficient labour market.

The remainder of the paper proceeds as follows. Section 2 provides a review of studies that have explored the integration of migrants in host countries' labour market and, more specifically, in the Spanish one. Section 3 presents the data and our analytical strategies. Section 4 presents the results while the last one discusses them and concludes.

Literature Review

The integration of migrants' in the host countries' labour market

Two main theories have tried to explain the integration of migrants in the host countries' labour market: the assimilation theory and the ethnostratification theory.

The assimilation theory (Chiswick 1978; Chiswick, Cohen, and Zach 1997) claims that the socio-occupational integration in the host country labour market depends to a large extent on the time spent in the host country. Due to the non-transferability of human capital acquired in their countries of origin, immigrants must invest time and effort in host societies to become suitable candidates for the best occupations. This occurs for several reasons: because the level of education in the origin country

is lower, provides different skills and abilities or is highly context-sensitive (Bernardi, Garrido, and Miyar-Busto, 2011); because homologation of degrees is a slow, sometimes even impossible, process (Rinken, et al., 2011); because of immigrants' lack of languages skills (Sanromà, Ramos, and Simón 2008). According to this theory, time helps immigrants to acquire the skills needed or to have recognized the ones already hold (Chiswick 1978; Dustmann and Fabbri 2003).

Some studies have however shown that, despite the time spent in the labour market, the immigrant population never reaches parity with the natives, neither in the probability of (un)employment, nor in the quality of the job (Zorlu and Hartog, 2012), nor in the income level (Okoampah 2016). To explain these kinds of findings, the ethnostratification approach theorizes that, irrespective of the time spent in the host country, the assimilation depends on the origin of the migrants. The explanation lies in the idea of the split labour market (Bonanich 1975; 1976), which is composed, on the one hand, by a set of occupations associated with high wages and status and, on the other hand, by the sum of low-skill/low-wage occupations, characterised by high instability and few or null options for promotion (Doeringer and Piore 1971; Martínez-Martín and Prior-Ruiz 2011). The split labour market is the results of different employment resources own (especially if linked to vulnerability and urgent necessity to work), but also of legal restrictions, racism and prejudice, of which migrants or specific ethnic groups can be victims (Bonanich 1975; 1976).

Studying the effects of economic crises, some studies have found sort of support for the ethnostratification theory, shown that, immigrants may face crises in a different way compared to natives and that the origin of the migrants matters (e.g. Venturini and Villosio 2018). Others (Bonifazi and Marini 2014; Martínez-Martín and Prior-Ruiz 2011) have found that, regardless of the economic cycles, immigrants from rich countries enjoy fast socio-labour integration than immigrants from impoverished countries that occupy the lowest job ranks and are hard hit by recessions.

Immigrants in the Spanish labour market and the Great Recession

In the recent decades, a large amount of investigations has focused on the socio-labour integration of immigrants in the Spanish labour market.

Studies before the Great Recession placed Spain as a clear example of socio-labour integration (Amuedo-Dorantes and Rica 2007; Izquierdo, Lacuesta, and Vegas 2009). Indeed, even though immigrants were concentrated in the most unstable and less qualified sectors (Bernardi and Garrido 2008; Bernardi, Garrido, and Miyar-Busto 2011), their employment rates were similar to natives (Fernández and Ortega 2008). In this line, Pumares et al. (2006) highlighted that, before the crisis, South Americans and immigrants from enriched countries were able to experience ascending social mobility processes after five years of residence. Similarly, Fernández and Ortega (2008), showed that, upon arrival, immigrants had very high unemployment rates compared to Spaniards, but also that, after five years since their arrival, they become similar. The authors however remarked that, regardless of the time spent in Spain, immigrants are always more overeducated than natives and have more chances to be employed in temporary jobs. These last findings are similar to those by Sanromà, Ramos, and Simón (2008), who highlight that, regardless of residence time in Spain, immigrants experience more overeducation and have worse wages than natives. They also emphasize that migrants constitute a heterogeneous group: while immigrants from rich countries enjoy working conditions similar to natives, immigrants from impoverished countries occupy always the lower labour segments.

Since the Great Recession of 2008, the focus has been placed on the impact of the economic crisis on the work trajectories and socio-occupational integration of migrants. In his descriptive analysis, Muñoz-Comet (2011) shows how immigrants generally occupy the worst jobs in terms of wages and status. He also shows that immigrants suffer the most from economic recessions due to their younger age, their lower experience and their lower level of education. They are therefore more likely to lose their jobs during crises. Nonetheless, he also shows how immigrant women, especially from Europe and Latin America, have much better resistance to the crisis, when it comes to unemployment, than their male peers. This finding was confirmed by the same author in a later study (Muñoz-Comet, 2012) and by Arranz, Carrasco, and Massó (2017). The possible explanation given by these authors is that women are overrepresented in some sectors, like the care one, that, despite

being precarious and instable, is less subject to unemployment during economic crises. Zugasti-Mutilva (2014) shows that immigrants have lower probabilities than natives in accessing permanent jobs. She also shows that immigrant women, despite better withstand unemployment during the crisis, are more likely to descend into the social structure compared to immigrant men. Cebolla-Boado, Miyar-Busto, and Muñoz-Comet (2015) analyse the market value of the educational credentials held by migrants compared with native males for the period 2003-2012. They claim that migrants have been less able than natives to grant themselves an employment through their education since the Great Recession. In addition, they found important differences among migrants: East European migrants have much more probabilities to have an employment compared to Africans and Latin American.

As can be noted by this review, the effects of the crisis in the socio-occupational integration of migrants have inspired a large amount of academic research. Nonetheless, existing studies have analysed it by focusing on the period before the crisis and the crisis years and we do not find evidence analysing this process after the crisis.

Data and methodology

We use microdata from the Spanish Labour Force Survey (from now on: LFS) provided by the Spanish Statistical Office (INE 2017) for the period 2006-2016. These data are suitable for this investigation for different reasons. In the first place, unlike other sources of available data, such as the Social Security Registry or the Income Survey, the LFS is a rotating panel that allows the construction of homogeneous time series. Secondly, the LFS survey format allows analysing not only declared employment, but also irregular employment. This work practice is very relevant when studying labour dynamics, especially of immigrants who are often excluded in many data sources in case of working without having work permits. Thirdly, thanks to the level of disaggregation of the three-digit occupations that the LFS presents, the socio-occupational class of the people surveyed can be studied very precisely. Finally, contrary to other sources of data where immigrants are many times excluded, the LFS it has a good proportionality that allows to study the situation of migrants in each socio-occupational in depth.

The LFS is a rotatory panel published quarterly and have a sample of 60.000 households (180.000 people approx.). In order to avoid attrition, each quarter, one sixth of the people is renewed. Each household is interviewed up to a maximum of six quarters, i.e. one year and a half. This feature could allow us following the individuals at least during 6 quarters and apply longitudinal technics. Unfortunately, the LFS does not contain a unique identifier –ID– for each household or for each individual allowing linking the observations among the quarters. This may lead to having repetitions of people in the sample. In order to avoid incurring in this error, common in some existing studies that have used the LFS as a simple cross-sectional dataset, we decided to select only one quarter every two years. Concretely, we have selected the second quarter of each year because is the more stable in employment terms and it is not conditioned by seasonality. Then, the data selected for the analysis correspond to the second quarter of the years 2006, 2008, 2010, 2012, 2014, 2016. This time span allows us to study how the integration process has developed over time, and whether and how the end of the Great Recession have created new opportunities for migrants' integration in the labour market.

Our analysis is made up of two steps: 1) a descriptive analysis, that proposes a new way to analyse the segmentation of the labour market based on the socio-occupational class; and 2) a multivariate analysis that tries to predict the probabilities that people have of belonging to a certain socio-occupational class before, during and after the Great Recession².

Descriptive analysis

In order to describe how the segmentation in each year observed looked like, first we have defined three major segments: the Spanish segment, the integrated segment and the immigrant segment. The spanish segment bring together all the occupations where the proportion of migrants was at least 1,5% lower than the total rate of migrants employed each year in the labour market. The integrated segment contains all the occupations that have the similar proportion of migrants than the total rate of migrants

² In order to better explore the socio-occupational integration of migrants over time, it would be advisable to apply longitudinal technics, by, for example, conducting Age-Period-Cohort Analysis. Unfortunately, in the LFS, in order to avoid attrition, people are interviewed during one year and a half and no individual/households IDs are given. This makes the application of such technics impossible.

employed in the labour market in a concrete year. The immigrant segment corresponds to all the occupations in where migrants are over-represented, i.e. those occupations that have more than 1.5% of migrants than the total proportion of employed migrants.

Table 1 here

Having defined the different segments, we compared it with the different socio-occupational classes for each year. The socio-occupational class has been constructed from the professions described in the National Classification of Occupations³ (INE 2011) disaggregated to 3 digits. We applied the Neoweberian occupational class structure proposed by Erikson and Goldthorpe (1992) and updated by Domingo-Salvany et al. (2013). We built the following eight categories: seven related to the different occupations and one related to the unemployment: I Higher-grade university-level professionals and managers with 10 or more employees; II Lower-grade university-level professionals and managers with less than 10 employees; III Intermediate professions: administrative employees and professionals of support to the administrative management and other services; IV Small proprietors and self-employed workers; V Supervisors and workers in skilled technical occupations; VI Skilled and semi-skilled manual workers; VII Unskilled manual workers; and the unemployed. By comparing the socio-occupational class with the different segments, we are able to observe whether migrants in different periods perform occupations belonging to different socio-occupational classes.

Multivariate analysis

In order to explore which factors are related with the probability of belonging to a socio-occupational class over another, we run three multinomial logit regressions for the following three periods, obtained by merging observations of different years: before the crisis (2006 and 2008), during the crisis (2010 and 2012) and after the crisis (2014 and 2016).

³ Due to a change in the National Classification of Occupations befallen in 2011, we have converted the original variable of 2006, 2008 and 2010. Thank to this conversion now the Spanish classification correspond with the international Classifications. See annex I and annex II for the entire classification.

The dependent variable is *socio-occupational class*, which is a categorical variable composed of eight categories as explained in the previous section (3.1). The variables *educational level* and *work experience* are inserted in the model in order to take into account for the assimilation theorisations. *Educational level* measures the highest level of studies reported by the respondents, It has three categories: low level, that includes illiterate people and people with primary education degrees; middle level, that concentrates people with secondary education qualifications, professional training and certificates of professionalism; and high level, which brings together people with academic degrees. *Work experience* is continuous variable that catches the years of experience in the Spanish labour market. In case of natives and migrants that have studied in Spain, we calculate the experience taking into account the time passed since the year they got their highest degree. In the case of migrants and Spaniards that have studied abroad, we calculate it taking into account the time passed from their arrival to Spain. Thanks to that, we can control for the work experience and also test the assimilation approach. In order to explore possible ethnostratification dynamics, we use the variable *origin*. From the original variable contained in the LFS "foreign nationality", including more than 120 nationalities, we have created 6 categories: Europe I, which brings together migrants from enriched countries, i.e. migrants from European countries in the Schengen area, the United Kingdom, Ireland, the United States and Canada; Europe II, which groups people from non-Schengen European countries; Africa, which includes migrants from any African country; Central-South America, which includes people from the Caribbean, Central America and South America⁴; and Asia, which brings together people from any Asian country. Due to the lack of sample, people from Oceania have been excluded from the sample⁵. All the models contain the variable *gender*, as many studies seem to show that the socio-occupational integration of women behaves differently as that of men, especially during the crisis period. The descriptive statistics of all the variables included in the analyses is provided in table 2.

⁴ It should be noted that, bringing together all migrants from Caribbean, Central America and South America do not allow us to differ between Brazilians and the rest of Spanish-speaking migrants.

⁵ In all the years, LFS only interviewed 18 people from Oceania (0,06% of the total sample)

Table 2 here

Results

Descriptive analysis

In figure 1 we present the evolution across time of the Spanish segment. As can be note, before the crisis, 30% of natives workers were mostly located in the first three socio-occupational classes. Concretely, 30% of workers from this segment were employed in occupations from the first and the second class and more than 33% were employed in intermediate occupations –III–. In addition, in 2006 only 10% of the occupations of the Spanish segment belong to the penultimate class and occupations from the lowest socio-occupational level were non-existent. Contrary to that, as can be note in figure 3, the segment where immigrants were over-represented, had an 80% of the manual and non-skill occupations, less than 2 % of occupations of the second socio-occupational class and no occupations of the first socio-occupational level during the same year.

Figure 1 here

Since the outbreak of the Great Recession, the Spanish segment reminded quite stable and even better than before the crisis. Concretely, the occupations from the two first classes start to raise and occupations from the two lowest socio-occupational classes had almost disappeared. In the worst years of the crisis, the Spanish labour market seems to increase the stratification among natives and migrants. During 2010 and 2012, around the 80% of occupations developed by Spaniards belonged to the first, second and third socio-occupational class –see figure 1–. At the same time, around the 90% of occupations developed by migrants belonged to the two last socio-occupational classes –see figure 3–.

If we look at the integrated segment presented in figure 2 –where migrants are in the same proportion than in the labour market–, it can be note that, before crisis, it constitutes the most inclusive segment with occupations from all the classes. However, the half of the people located in this segment performed lower-grade technical occupations. On the other hand, despite that in 2006 had some

occupations located in the lowest socio-occupational class, they disappeared in 2008. During the same year and in the same segment, all the occupations of the second socio-occupational class disappeared. In 2010, 2012 and 2014, the integrated increase the proportion of occupations from the second social class and from the fourth social class, but decrease the number of occupations from the third class. Finally, after the Great Recession, the integrated segment start to increase the proportion of intermediate occupations and to decrease the skilled and semi-skilled manual occupations (VI) and to reduce to zero the unskilled occupations (VII)

Figure 2 here

Figure 3 shows the evolution of the immigrant segment. It is remarkable that during the whole observed period this segment had the largest concentration of occupations from the lowest socio-occupational level. In the first years of the crisis, around 80% of occupations from this segment belong to the two lowest socio-occupational level. In the worst years of the crisis, this situation get even worse and the proportion of migrants employed in the last levels increase to near the 90%. Finally, during 2014 and 2016, the immigrant segment starts to include some occupations from the first socio-occupational classes.

Figure 3 here

The results by migrants' origin, displayed in figure 4, show that this is particularly the case of immigrants from Africa and Eastern Europe, whose representation in the highest socio-occupational classes is non-existent. On the other hand, Europeans from the Schengen area, Canadians and North Americans are located mainly in the higher socio-occupational classes compared with migrants from other origins. People from Latin American countries are represented in all socio-occupational classes, being the collective with the greatest socio-occupational integration. Finally, the vast majority of workers of Asian origin work on their own.

Figure 4 here

Beyond the different location of migrants in the different occupational segments, if we consider the time span observed, we can say that the distribution of migrants in the different socio-

occupational classes during the observed periods appears to be quite stable over time. This confirms how, compared to natives, immigrants usually hold occupations that are located in the lowest socio-occupational classes. This could be seen as indicative for a support for the ethnostratification explanation. However, as highlighted by the literature review, other variables, as the amount of time spent in the Spanish labour market or the educational level, could be at stake and could determine a worse occupational outcome of migrants, and among them, of certain categories of migrants. This is why it is important to check these results with a multivariate analysis that allows us to take into account for these variables.

Multivariate analysis

Table 2 shows the results of the multivariate analysis. If we look at the first socio-occupational class (Higher-grade university-level professionals and managers with 10 or more employees), we can see how, before the crisis, Europeans from the Schengen area, were the best positioned in the socio-occupational structure. While all other groups of migrants had a negative risk of belonging to the first socio-occupational class, Europeans from the Schengen area were more likely than natives to belong to this class over the reference class (Intermediate professions: administrative employees and professionals of support to the administrative management and other services). Europeans from Schengen area remain the best positioned in the labour structure during and after the crisis, although its relative risk of belonging to this socio-occupational class was of 1.22 before the crisis, decreased to 1,16 during the crisis and increased again to 1.37 afterwards. As can be seen, the rest of migrants had negative odds to belong to this socio-occupational class. The worst positioned were those from Asia, followed by Europeans from outside the Schengen Area and Africans. After the crisis, for the first time in the whole period observed, people from Central and South American had small, positive odds to belonging to this first class.

If we look at the results by gender, the results show how, before the crisis, being women decreases the likelihood of belonging to the first socio-occupational class by a factor of 0.55. This increases during the crisis period, when being women decreased by a factor of 0.7 the probability of

belonging to this socio-occupational class, compared to the reference group. After the crisis, this situation gets even worse than before the crisis, and being women decreases by a factor of 0.78 the probability of belonging to the first socio-occupational class.

The analysis points out that the level of education is a strong variable in order to predict the access to the first socio-occupational class during the three periods observed. Concretely, before the crisis, those with tertiary education had a relative risk of belonging to the first socio-occupational class 75 times more than those with the basic level of education. During the crisis, being highly educated, relative to lower educated, increases by a factor of 172 the risk of belong to this socio-occupational class compared to the III socio-occupational class. Finally, during the post-crisis period, as can be note in table 5, an increase in the level of education leads to an increase by a factor of 603 the odds of being a higher-grade professional.

The results for the second socio-occupational class (Lower grade professionals and managers with less than 10 employees) show that, before the crisis, being a European migrant from Schengen area increased the relative risk to be in this class by a factor of 1.65. This likelihood decreases during and after the crisis. Nevertheless, this group remains the most likely to belong to this class over the whole period. Interestingly, before the crisis, Asians and Africans were also more likely than natives to belonging to the second class compared to the third one. This slightly decreases during the crisis, especially for Africans. After the crisis, both groups were much less likely than natives to belong to this class compared to the third one. On the contrary, people from Central and South America saw a slight increase of their chances to be employed to this class during and after the crisis.

As observed for the first socio-occupational class, women were less likely to belong to the second socio-occupational class. This situation remains stable over the whole period and does not seem to change after the crisis. Also, over the whole period, the most educated have the best chances to belong to the second socio-occupational class. Concretely, before the crisis, being highly educated increased the relative risk of belonging to this class by a factor of 4.47. This slightly decreases during the crisis to become even higher than before the crisis afterwards.

Before the crisis, migrants from all origins had positive probabilities of being small proprietors –IV–, compare to working in intermediate administrative professions –III–. The best positioned in this socio-occupational class were the Europeans from Schengen area and Asians, followed by Africans, Europeans from abroad of the Schengen area and Central and South Americans. During the crisis despite that all migrants had positives odds, the highest probabilities of belonging to this class were enjoyed by Asians, followed by Africans and Europeans from the Schengen area. After the crisis, Asians got even higher probabilities to belong to this socio-occupational class than before and during the crisis. Women show negative odds of being self-employed during the whole observed period. By level of education, results confirm that higher levels decrease the probabilities of belonging to this socio-occupational class.

Looking at the V class (Supervisors and workers in skilled technical occupations), all migrants, relative to natives, were more likely to belong to this class compared to the third one. Before the crisis, given that all the variables in the model remain constant, being European from outside the Schengen area, Africa or Central and South America, increase the relative risk for being employed in these occupations respectively by a factor of 4.76, 2.49 and 2.06. During the crisis, being European from the Schengen area, from abroad of the Schengen area, from Africa, and central and South America, increase the odds of belong to this socio-occupational class by a factor of 1.43, 4.67, 2.55, 1.93 respectively. Finally, after the Great Recession, there are hardly any changes. The results by gender shows that during the whole period, being women, decreases the probabilities to belong to this socio-occupational class relative to the reference group. For all the period, a higher level of education decreases the risk ratios of being employed as supervisor or worker in a skilled technical occupation, compared of being employed in the third class.

Concerning the VI class (Skilled and semi-skilled manual workers), before the crisis, the relative risk of belonging to this socio-occupational class was especially high for migrants from impoverished countries. Concretely, coming from non-Schengen Europe and Africa increased the risk of being a skilled or semi-skilled manual worker by respectively 11,63 and 6,12 point factors

compared to non-manual employees. During the crisis and after the crisis, despite these two groups decrease their probabilities of belonging to this socio-occupational class, they still were the most likely to belong to this class. As was expected, those with tertiary education have very lower probabilities of being employed in manual occupations.

Impoverished migrants also are over-represented in the VII class (Unskilled migrant workers). Coming from non-Schengen Europe and Africa increased the risk of being working as an unskilled manual worker by respectively 9,00 and 8,48 compared to non-manual employees. For these two groups, the likelihood of belonging to this class enormously increased during and after the crisis. This result let hypothesise that during the crisis a proportion of these migrants may have lost their skilled or semi-skilled manual work to find one as an unskilled worker. Being women and highly educated decrease the probabilities of belong to this socio-occupational class over the period considered.

If we look at the probabilities of being unemployed compared to being in the third socio-occupational class, results show that, before the crisis, Asian immigrants had negative risk ratio of being unemployed, while being from Africa and Eastern Europe increased by a factor of 5 the odds of being unemployed. Surprisingly, being highly educated helped to prevent the odds of being unemployed only by a factor of 0.9. During the crisis, all but Asian migrants, had higher probabilities of being unemployed, especially Africans. After the crisis, this situation, even though for almost all the migrant groups, but Central and South Americans, the likelihood of being unemployed slightly decreased. However, relative to natives, migrants remain more likely to be unemployed. Holding constant variables such as work experience and educational level, results by gender highlight that the crisis has especially hit men. Women had much more probabilities of being employed in the third socio-occupational class than being unemployed.

Conclusion

In this paper we analyse the socio-labour integration of migrants in Spain before, during and after the Great Recession. Firstly, we looked and described the occupational distribution and segregation of migrants in the labour structure. Secondly, we focused on the probabilities that migrants have to

belong to different socio-occupational classes according to their origin and gender, controlling for level of studies and years of experience in the hosting labour market. In order to cover the pre and post crisis period, we used data from the Spanish Labour Force Survey (INE, 2018) for the period 2006-2016.

The results show that the origin of migrants is crucial, even after controlling for the years of experience in the Spanish labour market and the educational level. While migrants from enriched countries enjoy similar and, in some periods higher, probabilities to access to the best occupations than natives, in the three periods considered, migrants from impoverished countries are over-represented in the lower socio-labour classes. This particular situation seems to affect especially Africans and Eastern Europeans, who also seem to be the two groups that have been more affected by the crisis. Higher educational level and a larger work experience does not allow people of these two groups to access more stable occupations, where salaries are higher and working conditions are much better. We observed that, during the crisis, these two groups diminished their likelihood to be employed in the VI category but increased their chance to be employed in the VII one or to be unemployed. This result can signify a worsening in their occupational situation during the crisis. Latin Americans migrants confirms to be the most integrated in all the socio-occupational structure, probably because of their language knowledge, confirming the results of Cebolla-Boado, Miyar-Busto, and Muñoz-Comet (2015). It is noteworthy to see how the high segmentation of the labour market places concentrated Asian immigrants, regardless of the economic cycle, in socio-occupational class IV -Small proprietors and self-employed workers-. More interesting, during and after the crisis, Asians were even more likely to be represented in this category.

Overall, the results show a very unequal distribution of immigrants in the socio-occupational structure varying according to their origin, even after holding crucial variables such as educational level and years of experience constant. Despite the economic cycle considered, some groups of migrants seem to be stuck in a time warp. Various mechanisms could explain this result. On the one hand, these inequalities may be the results of discrimination and prejudices employers have against

some particular groups of migrants (Reskin 2017 Vs Pager & Quillian 2005). On the other hand, they can be also attached to the particular vulnerable situation some migrants experience. Indeed, the results have shown that Africans and Eastern Europeans are the two groups that are the worst located in the Spanish labour market. Whereas Europeans from the Schengen area do not need to work to be allowed to stay in Spain and have no difficulties in maintaining contact with families and friends in the origin countries and whereas migrants from Central and Southern America and Asia benefits from larger networks of compatriots in Spain, Africans and Eastern Europeans are newcomers in Spain and often lack these kinds of supports (Rinken 2006?). They thus may have a more urgent need to work that make them accept jobs for which they may be overqualified. Finally, even though we control for the highest educational level in our analyses, LFS does not contain information on whether the degree own has been officially homologated or not. The differences found between the different migrants' groups could be connected to the different yardsticks applied for the recognition of degrees from different countries that make easier or more difficult to have recognized formal educational qualifications from particular countries over others.

Future research should try to expand knowledge on these possible mechanisms at stake. In order to explore employers' prejudices and discrimination, survey or field experiments (e.g. Petzold 2017a; 2017b) could be conducted to check to what extent the geographical origin constitutes a sorting criterion in the hiring process. To better explore the importance of contextual factors, such as networks at destination and system of degrees' homologation, it could be useful to conduct a cross-national study comparing Spain with other countries. Finally, qualitative inquiries among different groups of migrants could definitively shed light into migrants' experience in the job market before, during and after the crisis and on the reasons explaining ethnostratification.

The results by gender show that, throughout the whole period considered, women have lesser chances than men to be occupied in the various categories compared to the reference one. Interestingly, women increased their chances to access occupations in almost all classes during and after the crisis. Furthermore, their chances to be unemployed during the crisis diminished. This result

may be viewed as a reflect of the fact that the crisis in Spain have particularly hit some sectors of the labour market, such as the construction industry, that can be considered very masculinised. Future research may want to expand our analysis by exploring the percentage of sexually segregated occupations in each socio-occupational class.

This research is not exempt from shortcomings and, hopefully, in the future, better data will be available to overcome them. Indeed, as the data we used are not longitudinal, we could not apply techniques such as Age-Period-Cohort (Bar-Haim, Chauvel, and Hartung 2019) to better test the assimilation approach and our results are essentially descriptive. Despite this limitation, the analysis conducted provides a detailed picture of the Spanish labour market before, during and, for the first time, after the Great Recession. We believe that considering of the socio-occupational classes in the analysis of the segmentation of the labour market is a contribution to the existing literature that we hope will inspire future research.

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Annexes

Annex I: Codification of each occupation

CODES (CNO_2011)	OCCUPATIONS
111	Miembros del poder ejecutivo y de los cuerpos legislativos; directivos de la Administración Pública y organizaciones de interés social
112	Directores generales y presidentes ejecutivos
121	Directores de departamentos administrativos
122	Directores comerciales, de publicidad, relaciones públicas y de investigación y desarrollo
131	Directores de producción de explotaciones agropecuarias, forestales y pesqueras, y de industrias manufactureras, de minería, construcción y distribución
132	Directores de servicios de tecnologías de la información y las comunicaciones (TIC) y de empresas de servicios profesionales
141	Directores y gerentes de empresas de alojamiento
142	Directores y gerentes de empresas de restauración
143	Directores y gerentes de empresas de comercio al por mayor y al por menor
150	Directores y gerentes de otras empresas de servicios no clasificados bajo otros epígrafes
211	Médicos
212	Profesionales de enfermería y partería
213	Veterinarios
214	Farmacéuticos

215	Otros profesionales de la salud
221	Profesores de universidades y otra enseñanza superior (excepto formación profesional)
222	Profesores de formación profesional (materias específicas)
223	Profesores de enseñanza secundaria (excepto materias específicas de formación profesional)
224	Profesores de enseñanza primaria
225	Maestros y educadores de enseñanza infantil
231	Profesores y técnicos de educación especial
232	Otros profesores y profesionales de la enseñanza
241	Físicos, químicos, matemáticos y afines
242	Profesionales en ciencias naturales
243	Ingenieros (excepto ingenieros agrónomos, de montes, eléctricos, electrónicos y TIC)
244	Ingenieros eléctricos, electrónicos y de telecomunicaciones
245	Arquitectos, urbanistas e ingenieros geógrafos
246	Ingenieros técnicos (excepto agrícolas, forestales, eléctricos, electrónicos y TIC)
247	Ingenieros técnicos en electricidad, electrónica y telecomunicaciones
248	Arquitectos técnicos, topógrafos y diseñadores
251	Jueces, magistrados, abogados y fiscales
259	Otros profesionales del derecho
261	Especialistas en finanzas

262	Especialistas en organización y administración
263	Técnicos de empresas y actividades turísticas
264	Profesionales de ventas técnicas y médicas (excepto las TIC)
265	Otros profesionales de las ventas, la comercialización, la publicidad y las relaciones públicas
271	Analistas y diseñadores de software y multimedia
272	Especialistas en bases de datos y en redes informáticas
281	Economistas
282	Sociólogos, historiadores, psicólogos y otros profesionales en ciencias sociales
283	Sacerdotes de las distintas religiones
291	Archivistas, bibliotecarios, conservadores y afines
292	Escritores, periodistas y lingüistas
293	Artistas creativos e interpretativos
311	Delineantes y dibujantes técnicos
312	Técnicos de las ciencias físicas, químicas, medioambientales y de las ingenierías
313	Técnicos en control de procesos
314	Técnicos de las ciencias naturales y profesionales auxiliares afines
315	Profesionales en navegación marítima y aeronáutica
316	Técnicos de control de calidad de las ciencias físicas, químicas y de las ingenierías
320	Supervisores en ingeniería de minas, de industrias manufactureras y de la construcción

331	Técnicos sanitarios de laboratorio, pruebas diagnósticas y prótesis
332	Otros técnicos sanitarios
333	Profesionales de las terapias alternativas
340	Profesionales de apoyo en finanzas y matemáticas
351	Agentes y representantes comerciales
352	Otros agentes comerciales
353	Agentes inmobiliarios y otros agentes
361	Asistentes administrativos y especializados
362	Agentes de aduanas, tributos y afines que trabajan en tareas propias de la Administración Pública
363	Técnicos de las fuerzas y cuerpos de seguridad
371	Profesionales de apoyo de servicios jurídicos y sociales
372	Deportistas, entrenadores, instructores de actividades deportivas; monitores de actividades recreativas
373	Técnicos y profesionales de apoyo de actividades culturales, artísticas y culinarias
381	Técnicos en operaciones de tecnologías de la información y asistencia al usuario
382	Programadores informáticos
383	Técnicos en grabación audiovisual, radiodifusión y telecomunicaciones
411	Empleados contables y financieros
412	Empleados de registro de materiales, de servicios de apoyo a la producción y al transporte
421	Empleados de bibliotecas y archivos

422	Empleados de servicios de correos, codificadores, correctores y servicios de personal
430	Otros empleados administrativos sin tareas de atención al público
441	Empleados de información y recepcionistas (excepto de hoteles)
442	Empleados de agencias de viajes, recepcionistas de hoteles y telefonistas
443	Agentes de encuestas
444	Empleados de ventanilla y afines (excepto taquilleros)
450	Empleados administrativos con tareas de atención al público no clasificados bajo otros epígrafes
500	Camareros y cocineros propietarios
511	Cocineros asalariados
512	Camareros asalariados
521	Jefes de sección de tiendas y almacenes
522	Vendedores en tiendas y almacenes
530	Comerciantes propietarios de tiendas
541	Vendedores en quioscos o en mercadillos
542	Operadores de telemarketing
543	Expendedores de gasolineras
549	Otros vendedores
550	Cajeros y taquilleros (excepto bancos)
561	Auxiliares de enfermería

562	Técnicos auxiliares de farmacia y emergencias sanitarias y otros trabajadores de los cuidados a las personas en servicios de salud
571	Trabajadores de los cuidados personales a domicilio (excepto cuidadores de niños)
572	Cuidadores de niños
581	Peluqueros y especialistas en tratamientos de estética, bienestar y afines
582	Trabajadores que atienden a viajeros, guías turísticos y afines
583	Supervisores de mantenimiento y limpieza de edificios, conserjes y mayordomos domésticos
584	Trabajadores propietarios de pequeños alojamientos
589	Otros trabajadores de servicios personales
591	Guardias civiles
592	Policías
593	Bomberos
594	Personal de seguridad privado
599	Otros trabajadores de los servicios de protección y seguridad
611	Trabajadores cualificados en actividades agrícolas (excepto en huertas, invernaderos, viveros y jardines)
612	Trabajadores cualificados en huertas, invernaderos, viveros y jardines
620	Trabajadores cualificados en actividades ganaderas (incluidas avícolas, apícolas y similares)
630	Trabajadores cualificados en actividades agropecuarias mixtas
641	Trabajadores cualificados en actividades forestales y del medio natural
642	Trabajadores cualificados en actividades pesqueras y acuicultura

643	Trabajadores cualificados en actividades cinegéticas
711	Trabajadores en hormigón, encofradores, ferrallistas y afines
712	Albañiles, canteros, tronzadores, labrantes y grabadores de piedras
713	Carpinteros (excepto ebanistas y montadores de estructuras metálicas)
719	Otros trabajadores de las obras estructurales de construcción
721	Escayolistas y aplicadores de revestimientos de pasta y mortero
722	Fontaneros e instaladores de tuberías
723	Pintores, empapeladores y afines
724	Soladores, colocadores de parquet y afines
725	Mecánicos-instaladores de refrigeración y climatización
729	Otros trabajadores de acabado en la construcción, instalaciones (excepto electricistas) y afines
731	Moldeadores, soldadores, chapistas, montadores de estructuras metálicas y trabajadores afines
732	Herreros y trabajadores de la fabricación de herramientas y afines
740	Mecánicos y ajustadores de maquinaria
751	Electricistas de la construcción y afines
752	Otros instaladores y reparadores de equipos eléctricos
753	Instaladores y reparadores de equipos electrónicos y de telecomunicaciones
761	Mecánicos de precisión en metales, ceramistas, vidrieros y artesanos
762	Oficiales y operarios de las artes gráficas

770	Trabajadores de la industria de la alimentación, bebidas y tabaco
781	Trabajadores que tratan la madera y afines
783	Trabajadores del textil, confección, piel, cuero y calzado
789	Pegadores, buceadores, probadores de productos y otros operarios y artesanos diversos
811	Operadores en instalaciones de la extracción y explotación de minerales
812	Operadores en instalaciones para el tratamiento de metales
813	Operadores de instalaciones y máquinas de productos químicos, farmacéuticos y materiales fotosensibles
814	Operadores en instalaciones para el tratamiento y transformación de la madera, la fabricación de papel, productos de papel y caucho o materias plásticas
815	Operadores de máquinas para fabricar productos textiles y artículos de piel y de cuero
816	Operadores de máquinas para elaborar productos alimenticios, bebidas y tabaco
817	Operadores de máquinas de lavandería y tintorería
819	Otros operadores de instalaciones y maquinaria fijas
820	Montadores y ensambladores en fábricas
831	Maquinistas de locomotoras y afines
832	Operadores de maquinaria agrícola y forestal móvil
833	Operadores de otras máquinas móviles
834	Marineros de puente, marineros de máquinas y afines
841	Conductores de automóviles, taxis y furgonetas
842	Conductores de autobuses y tranvías

843	Conductores de camiones
844	Conductores de motocicletas y ciclomotores
910	Empleados domésticos
921	Personal de limpieza de oficinas, hoteles y otros establecimientos similares
922	Limpiadores de vehículos, ventanas y personal de limpieza a mano
931	Ayudantes de cocina
932	Preparadores de comidas rápidas
941	Vendedores callejeros
942	Repartidores de publicidad, limpiabotas y otros trabajadores de oficios callejeros
943	Ordenanzas, mozos de equipaje, repartidores a pie y afines
944	Recogedores de residuos, clasificadores de desechos, barrenderos y afines
949	Otras ocupaciones elementales
951	Peones agrícolas
952	Peones ganaderos
953	Peones agropecuarios
954	Peones de la pesca, la acuicultura, forestales y de la caza
960	Peones de la construcción y de la minería
970	Peones de las industrias manufactureras
981	Peones del transporte, descargadores y afines

982	Reponedores
001	Oficiales y suboficiales de las fuerzas armadas
002	Tropa y marinería de las fuerzas armadas

Annex II: Codification of each socio-occupational class depending on the occupation

I Higher-grade university-level professionals and managers with 10 or more employees	II Lower-grade university level professionals and managers with less than 10 employees	III Intermediate professions: administrative employees and professionals of support to the administrative management and other services	IV Small proprietors and self-employed workers	V Supervisor s and workers in skilled technical occupation s	VI Skilled and semi-skilled manual workers	VII Unskilled manual workers
211	141	331	500	312	522	542
221	142	332	530	313	550	583
241	143	340	584	314	589	834
251	150	351	3*(situ==3)	320	620	844
261	212	352		521	630	910
271	222	353		581	762	960
281	224	361		713	770	970
291	231	363		719	781	921
292	232	371		721	820	922
282	246	381		722	511	931
283	247	382		723	512	932
262	248	383		725	541	941
265	263	411		731	543	942
259	264	412		732	549	943
242	225	421		740	561	944
243	272	422		751	562	949

244	293	430	752	571	951
245	311	441	753	572	952
223	315	442	761	594	953
213	316	443	782	599	981
214	333	444	783	611	982
215	362	450	789	612	
111	372	582	831	641	
112	373	591		642	
121	1	592		643	
122		593		711	
131		2		712	
132				724	
				729	
				811	
				812	
				813	
				814	
				815	
				816	
				817	
				819	
				832	
				833	
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				842	
				843	