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Abstract

The aim of this paper is to analyze occupational segregation in the Spanish labor market from a gender and an immigration perspective. In doing so, several local and overall segregation measures are used. Our results suggest that immigrant women in Spain suffer a double segregation since segregation affects them to a greater extent than it does either native women or immigrant men. There are, however, remarkable discrepancies among the segregation of immigrant women depending on their region of origin. Thus, immigrant women from the European Union (EU) have the lowest occupational segregation, while segregation seems particularly intense in the group of women from European countries outside the EU bloc and Asia (the levels of which are higher than that of Latin American and African women).

Keywords: immigration; gender; occupational segregation; local segregation; overall segregation
JEL classification: J16; D63

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1. Introduction

In the last twenty years, Spain has emerged from being an out-migration country to become an immigrant-receiving nation, mainly from Latin America (Ecuador and Colombia, mostly), Europe (Romania), and the Maghreb (Morocco). Immigration convergence with other European Union countries has occurred in a few years. Thus, according to the data from the Spanish Institute of Statistics (INE, 2009), in 1996 only 1.4 percent of Spain's population were foreign nationals, while this percentage increased to 11.4 percent in 2008. This trend has made Spain the country in the Organisation for Economic Co-operation and Development (OECD) with the greatest increase in its immigration rate over the period from 2000 to 2005, an increase that means Spain now ranks eleventh among countries with the highest rates of immigration.[1] Within the immigrant groups, the distribution by gender is rather balanced (the numbers in 2008 were 2.47 million women and 2.80 million men); however, within the Spanish labor market we see remarkable differences in the representations of women and men. In this regard, immigrant men show a higher representation than native men in construction and agriculture, whereas immigrant women are overrepresented in domestic services, accommodation, and catering (including restaurants and bars).

However, up to now, the literature has not addressed in detail the analysis and quantification of occupational segregation for each of these four demographic groups: immigrant women/men workers and native women/men workers. This is so, among other reasons, because most segregation indexes actually measure overall segregation rather than the segregation of a particular demographic group, since they quantify the discrepancies among the distributions of all population subgroups across occupations.[2] Nevertheless, one can be interested not only in measuring aggregate segregation but also in exploring the segregation of a target group--immigrant women workers, for example. Recently, Olga Alonso-Villar and Coral del Río (2008) have axiomatically proposed several indexes with which to quantify the segregation of any target group and have then connected them with overall segregation measures existing in the literature. This

[1] This allows Spain to occupy a position close to countries with a much longer immigrant tradition, such as USA, Sweden, Germany, and France (see United Nations, 2006).
[2] Thus, for example, Jaai Parasnis (2006) uses several overall segregation indexes in order to compare the distributions of natives and immigrants in Australia.

procedure allows one to measure the segregation of each population subgroup together with its contribution to overall segregation.

The aim of this paper is to analyze occupational segregation in the Spanish labor market from a gender and immigration perspective. In doing so, the measures put forward by Jacques Silber (1992), Sean Reardon and Glenn Firebaugh (2002), and David Frankel and Oscar Volij (2007) will be applied to quantify overall segregation, and the tools proposed by Olga Alonso-Villar and Coral del Río (2008) and Coral del Río and Olga Alonso-Villar (2010) will be used to analyze the segregation of several population subgroups. This will allow us to determine the contribution of immigrant women to overall segregation while comparing it with that of immigrant men, native women, and native men. In addition, the group of immigrant woman workers will be classified into several subgroups, depending on their home region, in order to discern the differences among them.

So far as we know, this topic has not yet been addressed in the literature. On one hand, the literature of segregation in the labor market has mainly focused on occupational/industrial segregation by gender, while differences among workers that related to their nationality/race have received less attention (Randy Albelda, 1986; Mary King, 1992; Jaai Parasnis, 2006), especially in Europe. On the other hand, in measuring segregation by gender, most researchers have dealt with overall segregation, whereas the segregation of population subgroups has received almost no consideration. (Some exceptions are Hazel Moir and Joy Selby Smith, 1979; and Coral del Río and Olga Alonso-Villar, 2010.)

Our case study is interesting in itself for three reasons. First, Spain is a country where occupational segregation explains a large part of the gender wage gap. In this regard, by using the European Structure of Earnings Survey for 1995, Robert Plasman and Salimata Sissoko (2004) estimate that this contribution represents about 29.6 percent in Spain. Second, the number of immigrants in Spain has remarkably increased in the last few years. And third, nationality appears to be an important factor in explaining Spanish earning gaps (Hipólito Simón, Esteban Sanromán, and Raúl Ramos, 2008).

2. Background

Gender disparities in the labor market can emerge from several causes, including individual characteristics, market opportunities, and environmental conditions. According

to human capital theory, discrepancies between the job opportunities of women and men may be a consequence of differences in education and experience. Therefore, one would expect small gender differences in the occupational structure of an economy so long as the educational achievements of women and men were similar. Nevertheless, in practice, this is not necessarily so. In fact, men in Spain are much more evenly distributed across occupations than women, despite the fact that the latter have a higher educational level (Coral del Río and Olga Alonso-Villar, 2010). Moreover, as these authors show, high-educated women are also less equally distributed across jobs than high-educated men, which suggests that gender segregation can coexist with educational achievements being higher for women than men. One should keep in mind, however, that a similar level of education between women and men does not necessarily mean a similar kind of education. In fact, women in Spanish universities continue to invest in acquiring skills oriented mainly toward traditionally female jobs, which also happens in the remaining European Union (EU) countries (see European Statistical Office, Eurostat, 2007). Thus, roughly 80 percent of students in Spain who graduated in teaching or health studies in 2004 were women, while this percentage decreased to nearly 26 percent in engineering and similar fields. (These percentages in the EU-27 were 77 percent and 24 percent, respectively.) Given that this decision for women is "based to a significant extent on labour market opportunities," as pointed out by Richard Anker (1998, p. 7), it is clear that labor markets still have to convince young females that it is worthwhile to study in male-dominated disciplines.

Another factor explaining gender segregation discussed in the literature is the existence of differences between women and men in their preferences for jobs. Regarding this matter, it is important to note that preferences are not independent of environmental conditions, especially if social roles induce women to assume most of the domestic responsibilities (including child and elderly care).[3] The compatibility between family life and work has important consequences in terms of employment patterns, and it may well fuel the trend of many women toward occupations with flexible work hours. In spite of this, Barbara Petrongolo (2004) shows that the overrepresentation of women in part-time and temporary jobs observed in most countries of the EU is not always explained by differences in preferences. In fact, she suggests that work discrimination does exist in southern Europe

[3] According to data from the Spanish Institute of Statistics (INE, 2006), one out of two male workers with children leaves his full parental responsibility to his wife.

since this observed segregation is not well explained either by productivity or by preferences.

In addition, segregation may arise to solve the difficulties that occur when grouping women and men in the work place. As pointed out by Claudia Goldin (2002) in her "pollution theory of discrimination," men lose status when women are hired for the same kind of jobs they hold since this could be viewed as a sign that those occupations have low requirements. Consequently, discrimination against women emerges, at least partially, as a form of protection of men's occupational status. George Akerlof and Rachel Kranton (2000) add psychological considerations to the analysis and propose a model based on the identity conflicts that arise when women and men share the same occupations. When a women works in what was traditionally viewed as a *male* occupation, she suffers a direct cost due to a loss of her female identity and an indirect (but not necessarily lower) cost if the identities of her male co-workers are affected by her presence and they, thus, act to strengthen and maintain their own identity. According to these authors, the interactions among these factors contribute to a separation between women and men at work, which creates a situation that is not without its cost.

The literature also offers several reasons that the distribution of immigrants across occupations may depart from that of natives (Pak-Wai Liu, Junsen Zhang, and Shu-Chuen Chong, 2004; Jaai Parasnis, 2006). Thus, on one hand, in order to enter the labor market, newly arrived immigrants have to accept jobs that do not necessarily match their skills; on the other hand, their job opportunities are likely to depend on migrant networks, all of which may reinforce the concentration of immigrants in occupations with a high immigrant presence. In addition, the educational attainment of immigrants may be very different from that of the host country, not only regarding the number of schooling years but also regarding the specific knowledge required to do well and prosper in the receiving country (as is the case of lawyers and doctors). Language and cultural differences between the sending and the receiving regions are also factors that may hinder the process of assimilation of immigrants, especially if employers in the receiving region possess discriminatory views or attitudes. One should keep in mind that the occupational segregation of immigrants may be also fueled by other factors. For instance, social and spatial characteristics of residential neighborhoods work to shape individuals' networks and affect the provision of basic public goods (such as education, healthcare, and

transportation), all of which certainly have an impact on the job opportunities of the immigrant population, especially that of women (Pascale Joassart-Marcelli, 2009). In addition, school and neighborhood segregation by race and social status may affect educational outcomes of students (David Card and Jesse Rothstein, 2007), which serves to perpetuate a fragmented society.

Both types of segregation, by gender and region of origin, should be a matter of concern to researchers and policy-makers. The tendency of some demographic groups to concentrate in low pay/status jobs, as is the case with many women and immigrants (Hervé Queneau, 2006; Pascale Joassart-Marcelli, 2009), notably impacts their levels of poverty. It also affects how other groups see them and how they view themselves, which may negatively condition their future prospects. In addition, the exclusion of certain social groups from some occupations implies a waste of human resources and reduces the ability of the market to respond to labor changes, a factor that should not be overlooked in a global economy concerned with efficiency and competitiveness (Richard Anker, 1998). And last, but not least, critical issue here is that "segregation enhances a lack of shared language, cultural values and norms. This makes social coordination more difficult. Some have argued that segregation puts the whole idea of a peaceful society with its constitutional and civic liberties at risk" (Romans Pancs and NicolaasVriend, 2007, p.4).

The literature on immigration in Spain has mainly dealt with the effects of immigration on native employment, the wage gaps between immigrant and native workers, and the assimilation of immigrants into the labor market.[4] However, scholars have not addressed the analysis and quantification of occupational segregation as it relates to the country of origin workers.[5] On the other hand, the studies on occupational segregation by gender in Spain have mainly focused on measuring the discrepancies between the distributions of women and men across occupations (Ricardo Mora and Javier Ruiz-Castillo, 2003, 2004; and Soledad Otero and Carlos Gradín, 2001), while the analysis of the segregation of

[4] See, Samuel Bentolilla, Juan Dolado, and Juan Francisco Jimeno (2007), Catalina Amuedo-Dorantes and Sara de la Rica (2007), Juan Canal-Domínguez and César Rodríguez-Gutiérrez (2008), Hipólito Simón, Esteve Sanromá, and Raúl Ramos (2008), Juan Dolado and Pablo Vázquez (2008), and Mario Izquierdo, Aitor Lacuesta, and Raquel Vegas (2009).

[5] A first attempt of taking into account the immigration variable can be found in Antonio Caparrós Ruiz, and Mª Lucía Navarro Gómez (2008), who show the distribution of native (and immigrant) workers in Spain across nine occupations.

particular demographic groups, such as that of immigrant women, has received almost no attention.[6]

3. Segregation Measures

According to Sean Reardon and David O'Sullivan (2004, p. 122), "segregation can be thought of as the extent to which individuals of different groups occupy and experience different social environments. A measure of segregation, then, requires that we (1) define the social environment of each individual, and (2) quantify the extent to which these social environments differ across individuals." Sociologists and economists have devoted a great deal of attention to analyzing segregation of students across schools and occupational segregation in the labor market. Most of these studies focus on the case of two population subgroups (blacks/whites, high/low social position, women/men), either proposing ad hoc measures that are used for empirical analysis (Otis Duncan and Beverly Duncan, 1955; Tom Karmel and Maureen MacLachlan, 1988; Jacques Silber, 1989), or axiomatically deriving segregation indexes (Robert Hutchens, 1991, 2004; Satya Chakravarty and Jacques Silber, 2007, among others). In this binary context, segregation is said to exist so long as one distribution departs from the other.[7] Thus, in measuring occupational segregation by gender, the distribution of women workers across occupations is generally compared with that of men. One should keep in mind, however, that this kind of measurement does not allow one to quantify the segregation of women workers, as is sometimes said, but rather overall or aggregate segregation, since both demographic groups are contrasted. Note that segregation exists not only when women have a low presence in certain occupations, but also when men do in others, since both women and men shape the employment structure of the economy. In fact, as documented by Richard Anker (1998), there are occupations everywhere that are strongly feminized (nursing, secretary/typist, housekeeper, bookkeeper/cashier, building caretaker/cleaner and tailor/sewer), which suggests that male workers are not distributed evenly across occupations, even though "the value of these niches to women is often of dubious value as these occupations tend to have low pay and status" (Richard Anker, 1998, p. 285).

[6] An exception can be seen in Coral del Río and Olga Alonso-Villar (2010), where the occupational segregation of several subgroups of women (partitioned by age, educational level, type of job, etc.) are analyzed. Note, however, that the aforementioned paper does not distinguish between immigrant and native women.

[7] The study of segregation in the case of multiple categories does not, however, have such a long tradition, even though in recent years this topic has received increasing attention among scholars (Jacques Silber, 1992; David Frankel and Oscar Volij, 2007).

As a consequence of the above, if one is interested in measuring women's segregation, or the segregation of any other target group, traditional segregation measures cannot be used. So far as we know, only Olga Alonso-Villar and Coral del Río (2008) have explored this issue axiomatically, while proposing new indices that satisfy basic properties. According to these local segregation measures, the target group is segregated so long as its distribution across occupations departs from the employment structure of the economy. The use of a general benchmark against which to compare the distribution of any population subgroup seems an appealing option since it allows them to propose local indexes with good properties and then connect them with overall segregation measures existing in the literature.

Measuring the segregation level of a target group does not imply, however, that the segregation of that group can be determined without taking into account the remaining population subgroups. Segregation is indeed a phenomenon that requires considering the relative position of individuals with respect to others, as is done when measuring poverty according to a relative approach. As in that case, we maintain that the segregation level of a target group can be calculated and that this creates a powerful approach allowing researchers to delve more deeply into the study of segregation. In fact, the measurement of female segregation in the labor market is not a new topic in the literature. For instance, three decades ago, Hazel Moir and Joy Selby Smith (1979) offered a variation of the index of dissimilarity to measure the industrial segregation of female workers in the Australian labor market.

3.1 Local segregation measures

When occupational segregation in the labor market is analyzed, the indexes commonly used quantify overall segregation. However, one can be interested not only in measuring aggregate segregation but also in exploring the segregation of a target group (local segregation). Olga Alonso-Villar and Coral del Río (2008) (AV-DR, henceforth) tackle this matter in a multigroup context by proposing an axiomatic framework in which to study the occupational segregation of any population subgroup. In what follows, we present the notation and introduce these tools.

Consider an economy with $J>1$ occupations among which total population, denoted by *T*, is distributed according to distribution $t \equiv (t_1, t_2, ..., t_J)$, where $t_j > 0$ represents the number of individuals in occupation j $(j = 1, ..., J)$ and $T = \sum_j t_j$. Let us denote by $c^g \equiv (c_1^g, c_2^g, ..., c_J^g)$ the distribution of the target group g $(g = 1, ..., G)$ across occupations, where $c_j^g \leq t_j$. Distribution c^g could represent, for example, immigrant women or any other group of citizens in which we are interested. Therefore, the economy can be summarized by matrix, *E*, which represents the number of individuals of each target group in each occupation, where rows and columns correspond to population subgroups and occupations, respectively. Note that the total number of individuals in occupation j is $t_j = \sum_g c_j^g$, and the total number of individuals of target group g is $C^g = \sum_j c_j^g$. In order to measure the segregation of a target population group we compare the corresponding row, $(c_1^g, ..., c_J^g)$, with the total sum of the rows, $(t_1, ..., t_J)$, both distributions expressed in proportions. In other words, distribution $\left(\frac{c_1^g}{C^g}, ..., \frac{c_J^g}{C^g}\right)$ is compared with $\left(\frac{t_1}{T}, ..., \frac{t_J}{T}\right)$.

$$
\begin{array}{c}
G \text{ subgroups} \times J \text{ occupations} \\
E = \begin{bmatrix} c_1^1 & \cdots & c_J^1 \\ \vdots & & \vdots \\ c_1^G & \cdots & c_J^G \end{bmatrix} \rightarrow \begin{bmatrix} \sum_j c_j^1 = C^1 \\ \vdots \\ \sum_j c_j^G = C^G \end{bmatrix} \\
\downarrow \\
\begin{bmatrix} \sum_g c_1^g = t_1 & \cdots & \sum_g c_J^g = t_J \end{bmatrix}
\end{array}
$$

Within this framework, AV-DR propose the following measures in order to quantify the segregation of target group g:

$$G^g = \frac{\sum_{i,j} \frac{t_i}{T} \frac{t_j}{T} \left| \frac{c_i^g}{t_i} - \frac{c_j^g}{t_j} \right|}{2\frac{C^g}{T}}, \qquad (1)$$

$$\Phi_a(c^g;t)=\begin{cases}\dfrac{1}{a(a-1)}\displaystyle\sum_j \frac{t_j}{T}\left[\left(\frac{c_j^g/C^g}{t_j/T}\right)^a-1\right] & \text{if } a\neq 0,1\\ \displaystyle\sum_j \frac{c_j^g}{C^g}\ln\left(\frac{c_j^g/C^g}{t_j/T}\right) & \text{if } a=1\end{cases}, \tag{2}$$

where the first measure is a variation of the classic Gini index and the second represents a family of indexes related to the generalized entropy family (a can be interpreted as a segregation aversion parameter). These indexes, together with a variation of the index of dissimilarity proposed by Hazel Moir and Joy Selby Smith (1979),

$$D^g=\frac{1}{2}\sum_j\left|\frac{c_j^g}{C^g}-\frac{t_j}{T}\right|, \tag{3}$$

will be used later in the empirical section.

To analyze the segregation of any demographic group, we will also use the local segregation curve proposed by AV-DR.[8] To calculate this curve, first, the occupations have to be ranked in ascending order of the ratio $\frac{c_j^g}{t_j}$ ($j=1,...,J$) and, second, the cumulative proportion of employment, $\sum_{i\le j}\frac{t_i}{T}$, is plotted on the horizontal axis and the cumulative proportion of individuals of the target group (women immigrants, for example), $\sum_{i\le j}\frac{c_i^g}{C^g}$, is plotted on the vertical axis. Therefore, this curve can be written as

$$S^g{}_{(c^g;t)}(\tau_j)=\frac{\sum_{i\le j}c_i^g}{C^g}, \tag{4}$$

where $\tau_j\equiv\sum_{i\le j}\frac{t_i}{T}$ is the proportion of cumulative employment represented by the first j occupations.[9]

Therefore, the local segregation curve shows the underrepresentation of the target group with respect to the employment structure of the economy, decile by decile. If the target group is distributed among occupations in the same manner as the distribution of total

[8] The segregation curve is similar to the Lorenz curve used in the literature on income distribution.

[9] In a binary context, the (overall) segregation curve is obtained by comparing the distribution of one population subgroup among organizational units with that of the other subgroup. (This curve was initially proposed by Otis Duncan and Beverly Duncan, 1955.)

employment, the local segregation curve would be equal to the 45º-line and no segregation would exist for that demographic group.

As shown by AV-DR, index G^g, together with the family of indexes $\Phi_a(c^g;t)$ (and also any other local segregation index satisfying some basic properties), is consistent with non-intersecting S^g curves. In other words, when comparing two different distributions, if the segregation curve of one of them dominates that of the other (i.e., if the segregation curve of the former lies at no point below the latter and at some point above), these indexes will take a higher value when they are evaluated at the dominated distribution. This makes the use of these curves a robust procedure, since when segregation curves do not cross, a powerful conclusion can be reached without the use of several local indexes. However, if curves cross or if one is interested in quantifying the extent of segregation, the use of indexes satisfying some basic properties seems the most appropriate course to take. One should keep in mind that when curves cross, the conclusion reached with an index may differ from that of others since even though all these local indexes have in common some basic properties, they disagree regarding additional properties. This is a consequence of the different weights that each index gives to discrepancies in occupations between the benchmark and the distribution of the target group.[10]

3.2 Overall segregation measures

In recent years, the study of segregation in the case of multiple categories of individuals has received increasing attention among scholars. Thus, David Frankel and Oscar Volij (2007) have characterized the mutual information index in terms of basic axioms. This index, which is an extension of that previously proposed by Henri Theil and Anthony Finizza (1971) in a dichotomous context, can be written as

$$M = \sum_g \frac{C^g}{T} \log\left(\frac{T}{C^g}\right) - \sum_j \frac{t_j}{T}\left[\sum_g \frac{c_j^g}{t_j} \log\left(\frac{t_j}{c_j^g}\right)\right]. \qquad (5)$$

[10] These differences also appear in the literature of income distribution when measuring inequality and poverty with indexes consistent with the Lorenz and TIP criterion, respectively.

In our case, it measures the amount of information that the random variable whose probability distribution is $\left(\frac{t_1}{T},...,\frac{t_J}{T}\right)$ contains about another random variable, whose probability distribution is $\left(\frac{C^1}{T},...,\frac{C^G}{T}\right)$. In other words, it quantifies "the reduction in the uncertainty of one random variable due to the knowledge of the other" (see Thomas Cover and Joy Thomas, 1991, p. 18). One can easily show that M can be rewritten as follows:

$$M = \sum_g \frac{C^g}{T} \Phi_1\left(c^g; t\right). \tag{6}$$

Therefore, this overall segregation measure can be built by aggregating a local index in an appealing manner: Each target group is weighted by its demographic weight, which seems helpful for empirical analyses, since it allows one to ascertain the contribution of each target group to overall segregation.

In order to compare the robustness of our results, in our empirical analysis we also use other overall segregation measures previously proposed in the literature, such as those offered by Jacques Silber (1992) and Sean Reardon and Glenn Firebaugh (2002). In this vein, the index proposed by the former, I_p, can be written as the weighted mean of local index D^g for each target group in which the economy can be partitioned:

$$I_p = \sum_g \frac{C^g}{T} D^g . \tag{7}$$

On the other hand, the unbounded Gini index, G, proposed by Sean Reardon and Glenn Firebaugh (2002) to measure overall segregation, is the weighted mean of local index G^g for each target group:

$$G = \sum_g \frac{C^g}{T} G^g . \tag{8}$$

4. Occupational Segregation in Spain from a Gender and Immigration Perspective

In the last decade, Spain has experienced a remarkable increase in its immigrant population. As shown in Figure 1, according to the revised version of the municipal census (Revisión anual del Padrón Municipal) undertaken by the Spanish Institute of Statistics (INE, 2009, 2010a), the number of immigrants in 1996 was over half a million people, while in 2008 it had increased to over 5 million people. As a consequence of this, the immigration rate has raised 10 percentage points, from 1.4 percent to 11.4. The cause of this immigration expansion is of a economic nature and it is related to both the remarkable increase of the Spanish GDP (the average annual percentage growth between 1998 and 2007 was 3.8, see European Commission, 2009) and the inability of the native labor supply to satisfy the high demand (see José Ignacio Pérez, 2009).

The immigrant employment in Spain has been analyzed from several points of view, mainly in studies that focus on quantifying its effects on the Spanish labor market, and also on public expenditures and revenues (Dolores Collado, Íñigo Iturbe-Ormaetxe and Guadalupe Valera, 2004; Rafael Muñoz de Bustillo and José-Ignacio Antón, 2009; Pablo Vázquez, Mario Alloza, Raquel Vegas and Stefano Bertozzi, 2008). Unlike previous works, the aim of this paper is to analyze the types of jobs in which immigrant women work so as to quantify the occupational segregation of this group, by using the tools shown in Section 3, as compared with that of immigrant men, native women, and native men.

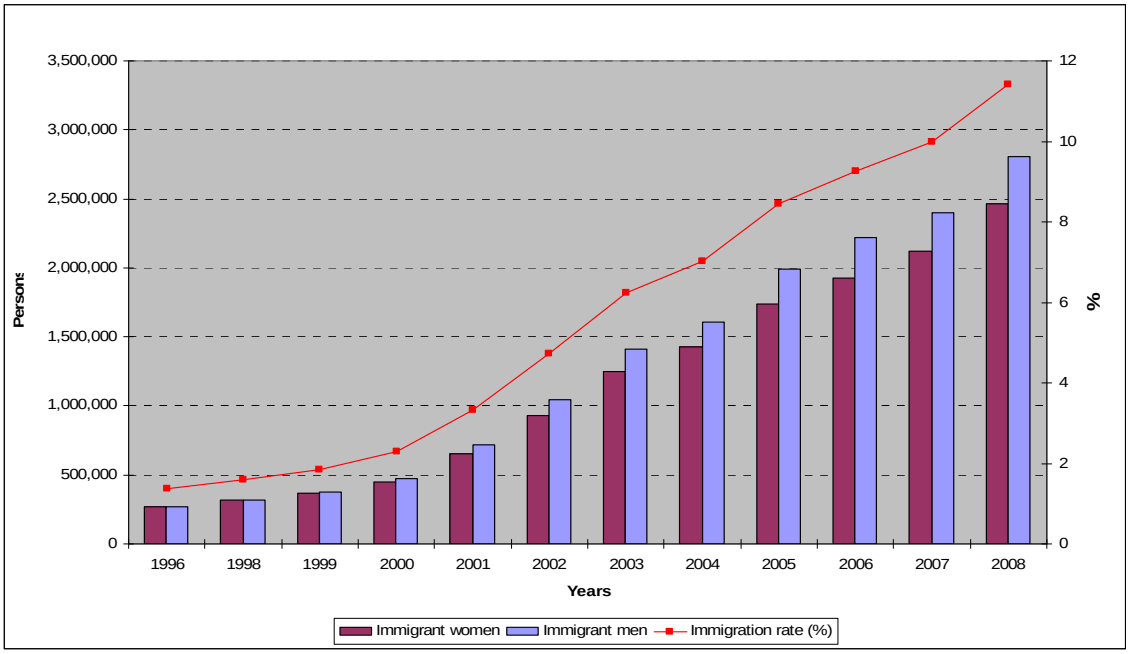

Figure 1. Women and men immigrants in the municipal census and immigration rate (in percentage). Source: INE (2009, 2010a).

The data used in this paper comes from the Spanish Current Population Survey (EPA) conducted by the INE by following Eurostat's guidelines. This quarterly survey offers labor market information of a representative sample of households. It is conducted mainly to provide figures on the labor force, and it is commonly used for international comparisons (in particular, to obtain the official unemployment and activity rates). Even though the microdata corresponding to 2009 are available, for this research we choose to use instead those of the second quarter of 2007 since we are interested in quantifying the occupational segregation of immigrant women during a period of high employment.[11] In fact, the second quarter of 2007 has the lowest unemployment rate of the whole democratic period (see Figure 2, where data for each quarter are given).[12]

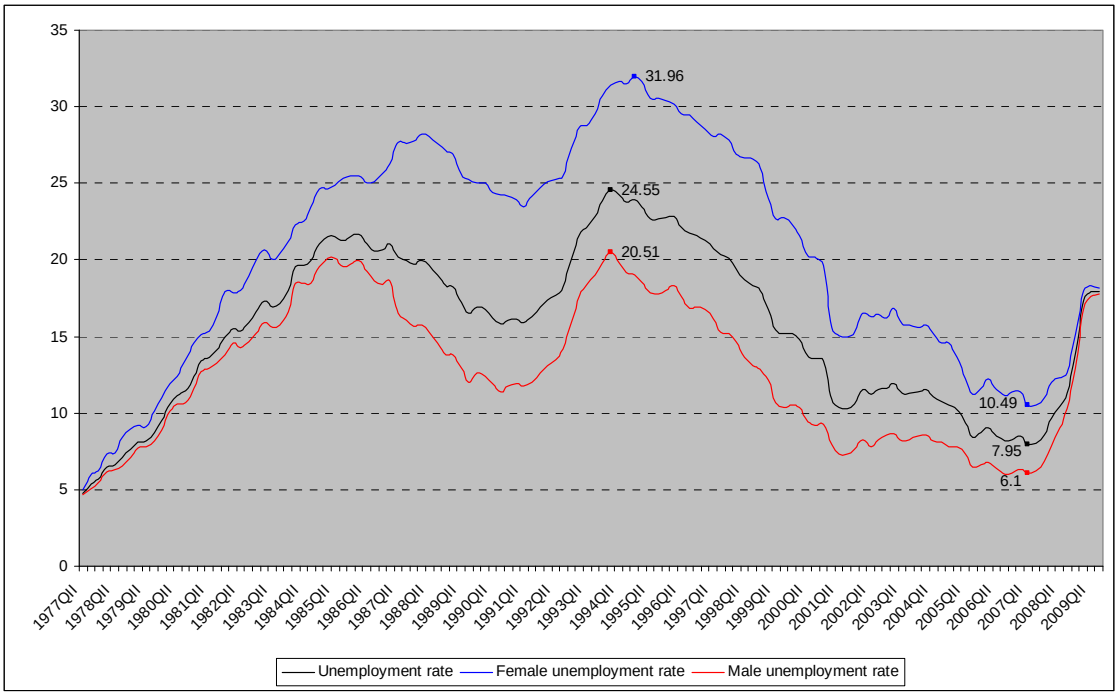

Figure 2: Evolution of the unemployment rates from 1977-2009. Source: INE (2010b).

According to this survey, 16.3 percent of the employed population of Spain is immigrant, 43.6 percent of which are women. (This percentage is 3 points higher than that of native

[11] In the second quarter of 2007, this survey gathered information on 166,674 individuals, 70,506 of whom were employed. (They represented an occupational population of 20,367,315 people.) The methodology of this survey was modified the first quarter of 2005, in particular, to take into account the increase of foreign residents in Spain.

[12] The death of the dictator Francisco Franco took place at the end of 1975, and the Spanish Constitution was signed in 1978, so that the general elections of 1979 are the first of the present democratic period. Finally, note that Spain joined the European Union in 1986.

women within native workers.)[13] Figure 3 shows the distribution of immigrant workers, both women and men, according to six large regions of origin labeled as follows: The EU-25 and other countries, the Rest of Europe, Latin America, Africa, Asia, and the Rest of the World.[14] We see that Latin American immigrants represent nearly 50 percent of total employed immigrants, and this region is the only one where the number of women exceeds that of men. (Of the total number of Latin Americans working in Spain, 50.3 percent are women.) If we look at each gender separately, we see that immigrant women working in Spain, who represent 7.1 percent of the labor force, come mainly from Latin American and European countries. Regarding immigrant men, who have a higher presence in the labor force (9.2 percent), we find that those from Africa have an important weight as well. Immigrants in the Rest of the World subgroup represent a very small group in both cases.

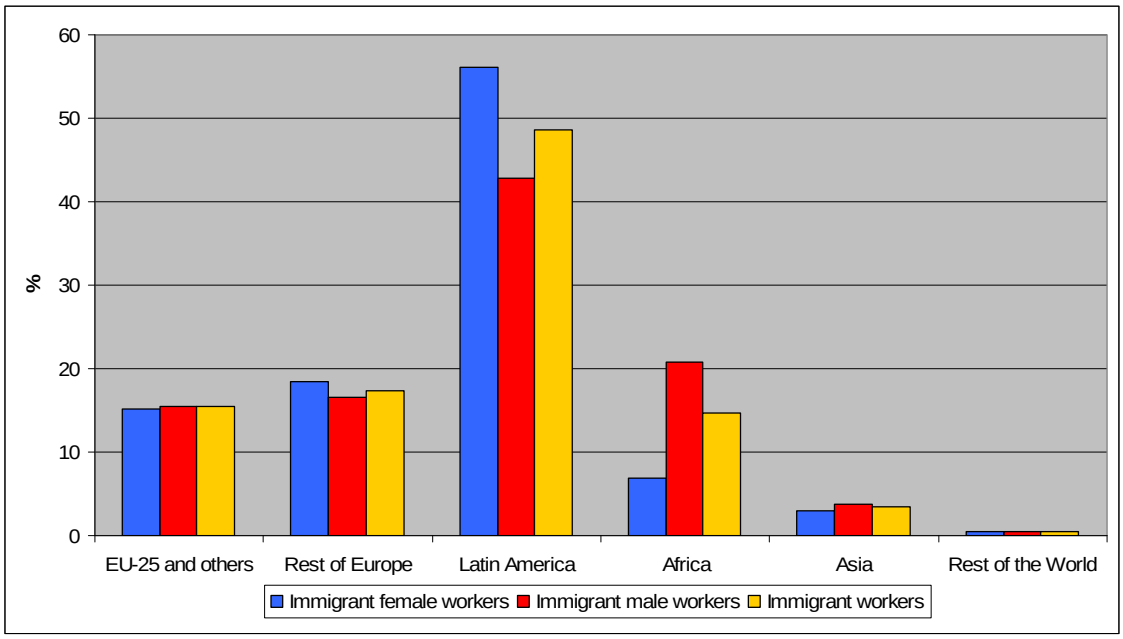

Figure 3: Distribution of immigrant working women and men across six large regions

The relevance of immigration from European countries and Africa can be explained by their geographical proximity, especially if we take into account that Morocco (which

[13] By immigrant population, we mean those persons born outside of Spain and also to those born in Spain who possess a foreign or double nationality. (This allows us to include second-generation immigrants in the study.)

[14] We have included Iceland, Liechtenstein, Norway, and Switzerland in the group named "EU-25 bloc and others" since, even though these countries are not included in the European Union, the immigration policies applied in Spain to them are similar to those within the bloc ("Régimen Comunitario de residencia"). However, Romania and Bulgaria, which are included in the EU-27 since 2007, are not included in this group since most of these immigrants are affected by a transitory regimen, which is similar to that of countries outside the European Union ("Régimen General de extranjería"). The region named "Rest of the World" includes part of North America (Canada and the USA), Australasia, and Oceania.

contributes nearly 12 percent of the total immigrants) is the African country with the highest number of workers in Spain, followed at great lenght by Senegal (see Figure 4). Immigration from the group labeled “Rest of Europe” is also strongly concentrated in two countries: Romania (which represents 12.4 percent of total immigration) and Bulgaria (2 percent). Both countries have belonged to the EU since 2007 even though, as shown in the Appendix (see Figure 9), their per capita gross domestic product (GDP) is below 50 percent of the EU average, which helps to explain the large numbers of immigrants from these countries. On the contrary, the presence within the Spanish labor market of other European countries outside the EU bloc is more balanced, and none of them stands out against the others.

Regarding Latin American immigrants, it should be noted that the strong presence of this group cannot be explained merely by geographic proximity, but rather by historical and cultural factors. A shared common language and the fact that some of the Spanish migrants who moved to America in the past (for economic, as well as political reasons) possess a Spanish nationality are both factors that contribute to the strong networks found on both sides of the Atlantic, which in turn, facilitates the arrival of new workers to Spain. At present, Ecuador (with 14 percent of total immigrants), Colombia (7 percent), Argentina and Bolivia (around 5 percent, each), and Peru (3 percent) are the countries with the highest presence of immigrants.

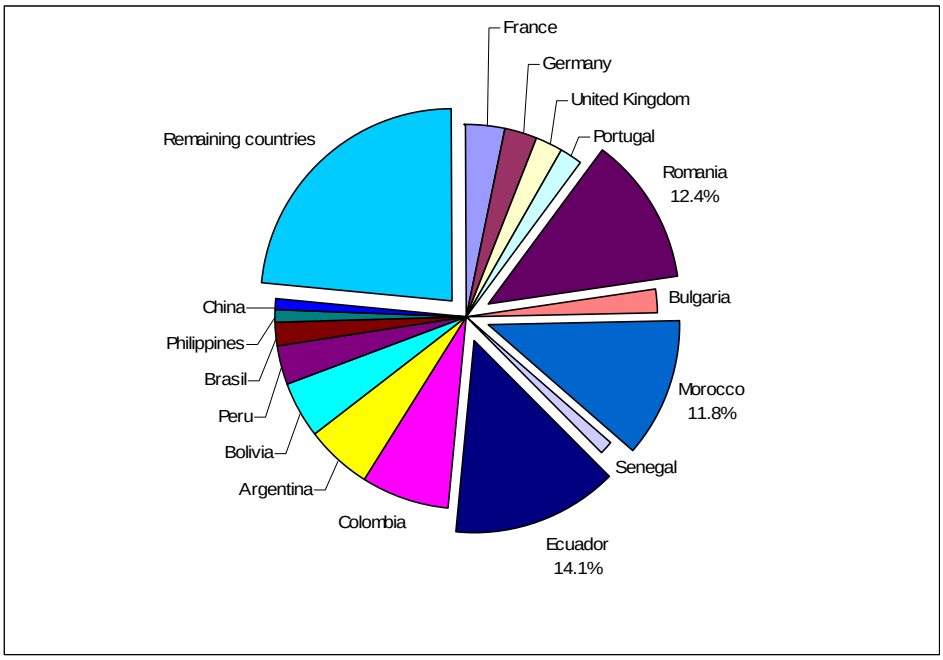

Figure 4. Distribution of working immigrants across main countries of origin

If we analyze the main characteristics of immigrants in Spain, as shown in Table 1, we see that immigrant female (and male) workers are younger than native workers, especially those from European countries outside the EU bloc, Africa, and Latin America.[15] Regarding their educational attainments, we find remarkable differences among immigrants depending on their region of origin:[16]

a) A greater proportion of both female and male workers from the EU bloc, and especially those from the rest of the world, have university degrees than do native workers. Thus, while 41 percent of native women in Spain (and 30 percent of native men) have a high level of education, this percentage increases to 44 percent for women from the EU bloc and to 63 percent for the rest of the world. (These percentages are, respectively, 42 percent and 83 percent for men.)

b) Workers from other European countries and Latin America have an intermediate-level of education, since more than 41 percent of women and 38 percent of men have finished secondary school.

c) In the Asian and African groups, the proportion of female (and male) workers with a low level of education is particularly high (between 49% and 60% for women and between 45% and 69% for men).

	Natives		EU-25 and others		Rest of Europe		Latin America		Africa		Asia		Rest of the World	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
AGE														
Young (<30)	26.9	24.7	24.1	22.4	46.4	41.0	36.7	36.0	36.8	30.8	34.1	27.6	36.8	7.7
Middle-aged	43.3	41.1	55.7	56.7	40.1	47.9	46.6	48.7	49.0	53.9	40.8	51.2	33.7	43.2
Elderly (>45)	29.8	34.2	20.2	20.9	13.5	11.1	16.6	15.3	14.2	15.3	25.1	21.2	29.5	49.1
EDUCATION														
Low-educated	37.2	48.9	28.2	34.9	28.5	28.9	37.7	42.6	59.5	69.2	48.6	44.9	14.8	7.7
Intermediate-educated	22.0	20.9	27.4	23.4	45.1	46.8	41.3	38.1	24.9	23.1	32.2	29.4	22.7	9.1
High-educated	40.8	30.2	44.4	41.7	26.4	24.3	21.0	19.3	15.6	7.7	19.2	25.7	62.5	83.2

Table 1: Distribution of immigrant and native workers by educational level and age

[15] Three groups of age have been considered: Young individuals (16 to 29 years old), middle-aged individuals (30 to 44 years old), and elderly individuals (over 45 years old).

[16] Three educational groups are considered: Low-educated (those who have not finished secondary school); intermediate-educated (those who have completed secondary school); and highly-educated (those who have a college degree or a degree in vocational training, 2nd technical college).

4.1. Occupational segregation of immigrant women

When analyzing in which economic sectors immigrant women are employed, we find that 28 percent of them are in domestic services, 20 percent are employed in accommodations and catering business (including bars and restaurants), and 24 percent work in branches of real estate and other business activities (including building cleaning), and retail trade (see Table 5 in the Appendix).[17] These percentages strongly vary, however, by region of origin. Thus, women from the EU bloc have a distribution across branches of activity similar to that of native women workers, showing a low presence in domestic services and a high presence in education and manufacturing industries.[18] However, women from other European countries, Latin America, and Asia are highly concentrated in domestic services, with ratios between 28 percent and 39 percent. It is also important to emphasize the strong presence of female African and Asian workers in accommodations and catering (10 points above that of the entire populaiton of immigrant women).[19]

In order to focus the study of the distribution of immigrant women across jobs, we have plotted the occupational segregation curve of this group, together with the segregation curves of immigrant men, native women, and native men (see Figure 5, where the four target groups are included). Occupations are considered at a two-digit level of the CNO-1994 (National Classification of Occupations), and the list includes 66 occupations. Each point of the segregation curve of immigrant women indicates the proportion of these workers corresponding to each cumulative decile of total employment. (The remaining curves are built analogously.) Note that in order to build this curve, the occupations have to be ranked according to the relative presence of the target group (see Section 3). Thus, the first decile represents 10 percent of total employment, and it includes those occupations in which immigrant women have the lowest relative presence; the second cumulative decile represents 20 percent of total employment, and it also includes those

[17] Regarding male immigrants, 39 percent of them work in construction while 34 percent are distributed among manufacturing, retail trade, and accommodation and catering.

[18] The pattern of working women from the rest of the world differs notably from that of native and remaining immigrant women, but we must be careful in deriving conclusions from this group, given its small weight within the Spanish labor market.

[19] The concentration of immigrant men in construction is particularly intense for those coming from Africa, Latin America, and from European countries outside the EU bloc (these percentages are 38, 41 percent and 55 percent, respectively). Note that construction is an important sector of the Spanish economy. During the real-estate boom, which took place between 1998 and 2006, this sector explained about a forth of the economic growth (Julio Rodríguez López and Erica Fellinger Jusúe, 2007). It is also remarkable the presence of the Europeans from outside de EU bloc, and that of African male workers, as well, in agriculture (with percentages around 12 percent).

occupations in which the target group has the lowest relative presence, and so on. If 10 percent of immigrant women worked in the occupations included in the first decile of total employment, 20 percent in the second, 30 percent in the third, etc. one could conclude that the distribution of female immigrant workers across occupations does not show segregation (and the corresponding curve would be equal to the 45º-line). So long as the segregation curve of the target group departs from the 45º-line, the target group is segregated: It is underrepresented in certain kinds of occupations (those included in the bottom deciles) and, consequently, overrepresented in others (those included in the top deciles). The further this curve is from the 45º-line, the higher is the segregation level of the target group.

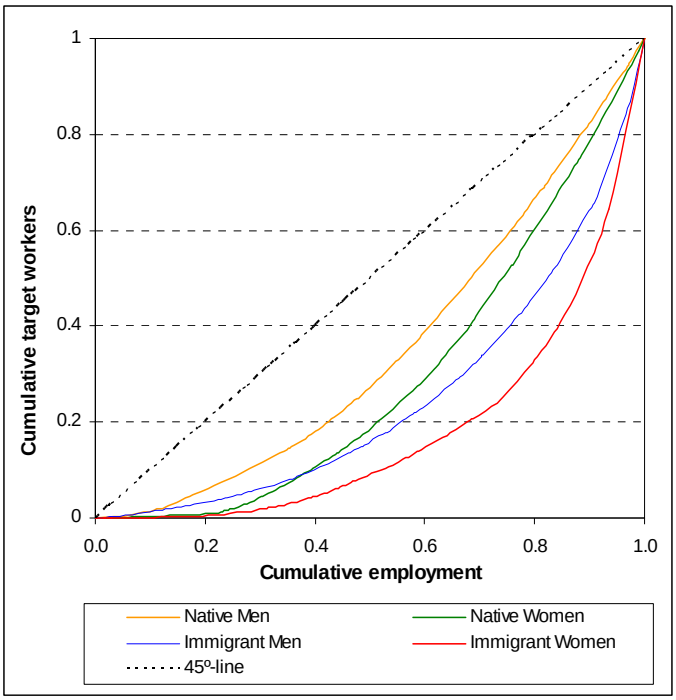

Figure 5. Occupational segregation curves of immigrant/native women and men.

As shown in Figure 5, the segregation curve of immigrant women is below that of immigrant men and native women and men. Therefore, immigrant women suffer a double segregation: They are more segregated than both immigrant men and native women. Regarding immigrant men, their curve is also below that of native men, but the use of these curves does not allow one to draw any conclusions about the segregation of this group as compared with that of native women, since the curves cross, which makes the use of local segregation indexes imperative (see Table 2, where six of the local indexes defined in Section 3 are shown). Most local indexes indicate that the occupational segregation of immigrant men is higher than that of native women, and all of them show

much higher value than those of native men. (This is consistent with the conclusion achieved by using the segregation curves, since the curve of immigrant men is clearly below that of native men.)

From Figure 5, we may also infer that there are many occupations in which immigrant (and also native) women do not work, while the number of occupations in which immigrant (and native) men do not work is much lower. Thus, in the second cumulative decile of the corresponding segregation curve (which includes the 20 percent of jobs where the respective target group has the lowest presence) 5.8% of native men, 3.3% of immigrant men, 1% of native women, and 0.4% of immigrant women work. Therefore, one should not be surprised that the disparities in terms of segregation between both immigrant groups are so large (as shown in Table 2), and also that these disparities increase when the parameter of index $\Phi_a(c^g;t)$ lowers. Given that the segregation curve of immigrant men is never below that of immigrant women, all of the segregation indexes consistent with this criterion show higher values for the latter. Moreover, these indices show that the segregation of immigrant women is at least 26 percent higher than that of immigrant men.

LOCAL SEGREGATION	$\Phi_{0.1}$	$\Phi_{0.5}$	Φ_1	Φ_2	D^g	G^g	Employment shares (%)
Immigrant women	1.18	0.79	0.73	0.98	0.49	0.63	7.1
Immigrant men	0.49	0.43	0.42	0.54	0.37	0.50	9.2
Native women	0.54	0.40	0.31	0.26	0.31	0.41	33.9
Native men	0.21	0.18	0.15	0.13	0.23	0.29	49.8

Table 2. Local segregation indexes of immigrant/native women/men and employment shares.

To continue this analysis, we plot the distribution of immigrant working women across non-cumulative ventiles of total employment (once that occupations have been ranked from low to high female immigration presence) and compare it with the distribution of the remaining population subgroups across the same ventiles (see Figure 6). We find that in those occupations where there are almost no immigrant women (as happens in the first ventile), there are no native women either. On the other hand, in those occupations where most immigrant women work (which corresponds to the fifth non-cumulative ventile), the proportion of native women working there nearly doubles that of immigrant males and quadruplicates that of native males. In other words, the distribution of immigrant women seems to be more similar to that of native women than to the distribution of immigrant

men. In fact, if we consider the top ten occupations in which immigrant women have the highest relative presence (which includes domestic employees and other indoor cleaning staff, catering workers, and personnel service workers, inter alia), we find that they employ 77 percent of the immigrant women, 45 percent of the native women, 21 percent of the immigrant men, and 11 percent of the native men (see Table 6 in the Appendix). It is important to note that according to the Spanish Structure of Earnings Survey for 2002 provided by the INE, all of these occupations pay hourly wages that are below the national average (see Table 6, last column).[20] On the other hand, the list of occupations with the lowest presence of immigrant women represents 1 percent of these workers, 5 percent of native women, and 51 percent of immigrant men. Observe that even though the hourly wages of these occupations are slightly higher than those associated to the top ten list, those in which immigrant men have a higher presence are also below the national average. In fact, women and men immigrants share a strong presence in low-wage occupations, even though, as shown before, they differ regarding the type of low-wage occupation in which each group works: The former tend to concentrate in jobs strongly feminized, while the latter concentrate in the most masculinized jobs. Thus, in only 2 out of 66 occupations, do both women and men immigrants have employment ratios above the national employment ratios: *Catering service workers* and *Agricultural, livestock, and fishing laborers*.

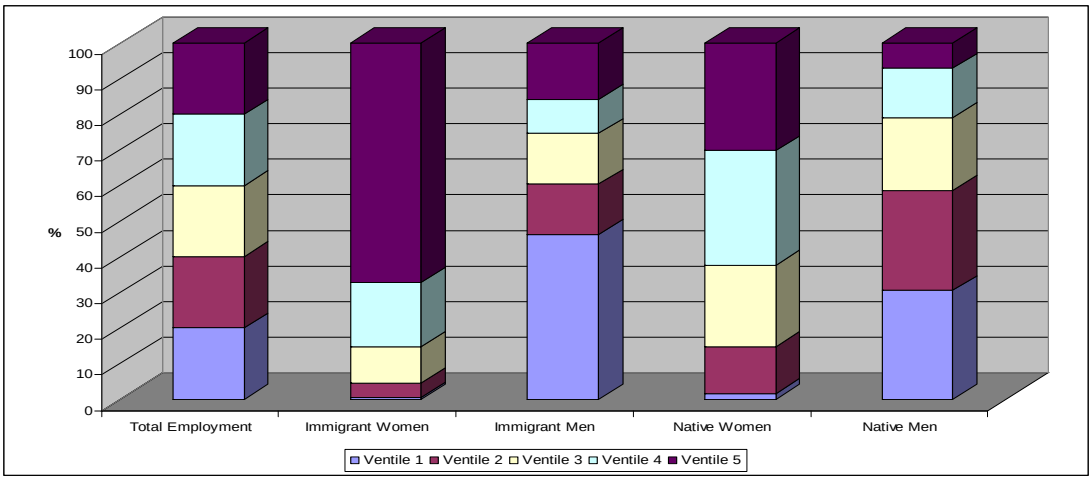

Figure 6. The distribution of immigrant/native women and men across ventiles of total employment ranked by the presence of immigrant women.

[20] Even though the top ten occupations with the highest relative presence of native women are not shown in the aforementioned table, we find that in only two of them, professions associated with a first cycle university degree either in health or teaching, the presence of immigrant women is very low. Both occupations have wages above the national average (54 percent and 43 percent above the average, respectively, according to the aforementioned survey).

OVERALL SEGREGATION	M	G	I_p
	0.27	0.38	0.29
Contribution to overall segregation (%)	$\frac{C^g}{T}\frac{\Phi_1^g}{M}$	$\frac{C^g}{T}\frac{G^g}{G}$	$\frac{C^g}{T}\frac{D^g}{I_p}$
Immigrant women	18.9	11.9	12.1
Immigrant men	14.2	12.1	11.7
Native women	39.0	37.1	37.0
Native men	27.9	38.9	39.2

Table 3. Overall segregation and contribution of each target group

Finally, if we calculate the contribution of each target group to overall occupational segregation, we find that the category of immigrant women contributes almost 12 points above its demographic weight according to index M (18.9 percent versus 7.1 percent) and 5 points above it, according to indexes G and I_p (compare Tables 2 and 3).[21] The contribution of both immigrant men and native women to overall segregation is between 5 and 3 points above their demographic weights, which reinforces our previous finding that immigrant women suffer a double segregation.

4.2. Occupational segregation of immigrant women by region of origin

In what follows, we wonder whether the distribution of immigrant women across occupations varies depending on the region of origin of these immigrants. For that purpose, the segregation curve of immigrant women is decomposed in six subgroups (see Coral del Río and Olga Alonso-Villar, 2010, for a more technical description of this kind of decomposition). The first six bars in Figure 7 represent the distribution of the corresponding subgroups of female immigrants across non-cumulative ventiles of total employment once occupations have been ranked from low to high female immigrant presence. Therefore, each non-cumulative ventile represents 20 percent of total employment in Spain and the classification of jobs in these five ventiles is common for all the subgroups considered in the analysis. The seveth bar at the right-hand side of Figure 7 represents the distribution of immigrant women across the above-described ventiles.

[21] The difference among these indexes can be explained as follows: M index gives more importance to the fact that there are many occupations in which women immigrants do not work than the other two overall indexes.

We see that women from the EU bloc are more evenly distributed across non-cumulative ventiles than the remaining subgroups (and also than the whole immigrant female group) since they work in occupations with both low and high female immigrant presence. However, women from Asia, Africa, Latin America, and the rest of Europe are strongly concentrated in occupations with many other immigrant women (the fifth ventile ranges between 58 percent and 83 percent). Thus, 83 percent of the women who come from countries outside of the EU bloc works in the occupations of the Spanish economy with the highest female immigrant presence.[22]

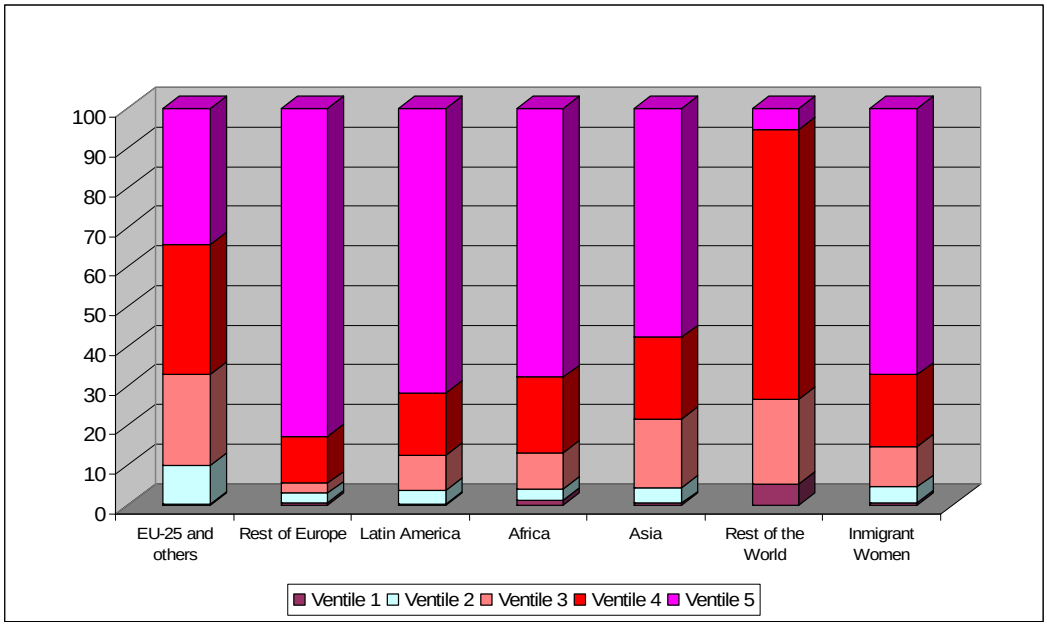

Figure 7. Distribution of immigrant women across ventiles by region of origin.

In order to go further in the analysis, we now plot the segregation curve of each subgroup of immigrant women (see Figure 8). We see that the occupational segregation of women from the EU bloc is the lowest, while that of women in the "Rest of the World" category is the highest, i.e., the former group has the lowest occupational segregation while the latter has the highest.[23] Note that the high segregation of women in the "Rest of the World" group is a consequence of a strong concentration of these women in *scientific jobs*,

[22] The concentration of immigrant men from these regions in occupations with high immigrant male presence is not so strong, as shown in the Appendix (Figure 10).
[23] This result is also found in the case of immigrant men, even though, in their case the segregation curve of those coming from the EU is closer to the curve of Latin Americans and Asians than in the case of females (see Figure 11 in the Appendix).

especially teaching, and *administrative jobs* (47 percent and 27 percent of them, respectively, work in these types of occupations). [24]

In Figure 8, we also note that Europeans from outside the EU bloc have a higher occupational segregation than Latin Americans and Africans. This may be a consequence of the more intense concentration of the former in 2 out of 66 occupations: *Catering service workers* (such as cooks and waiters) and, especially, *domestic and other indoor cleaning staff* (which represent, respectively, 22 percent and 46 percent of immigrant women from European countries outside the EU bloc). Most local indexes also show that these European women suffer more segregation than Asians (see Table 4), while the later are more segregated than Latin Americans and Africans. From all the above data, it follows that women from European countries outside the EU bloc represent the group with the highest occupational segregation in Spain (excluding the particular case of women from the "Rest of the World" group), followed closely by Asian women.

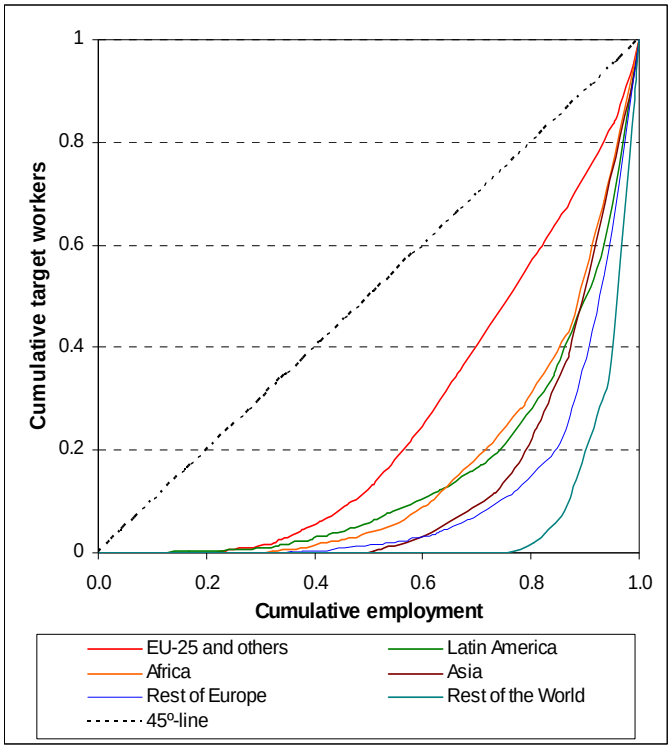

Figure 8. Occupational segregation curves of immigrant women coming from six large regions.

[24] In any case, remember that we must be careful about drawing conclusions for the "Rest of the World" group given its small weight within the Spanish economy.

LOCAL SEGREGATION Immigrant women	$\Phi_{0.1}$	$\Phi_{0.5}$	Φ_1	Φ_2	D^g	G^g	Immigrant women (%)
EU-25 and others	2.23	0.65	0.45	0.40	0.38	0.48	15.2
Rest of Europe	3.77	1.45	1.25	1.87	0.65	0.78	18.4
Latin America	1.52	0.95	0.87	1.22	0.54	0.68	56.1
Africa	3.28	1.07	0.84	1.00	0.52	0.67	6.9
Asia	5.27	1.45	1.07	1.29	0.62	0.74	3.0
Rest of the World	8.17	2.30	1.92	3.91	0.79	0.89	0.4

Table 4. Local segregation indexes of immigrant women and employment shares.

We also find that, according to four out of six indexes, segregation is slightly higher for Latin Americans than it is for Africans (Table 4), which may be a consequence of stronger concentration of Latin Americans in *domestic and other indoor cleaning staff* (40 percent versus 31 percent). Note, however, that the curve of Africans begins to take on values above zero at the right-hand side of the point on the horizontal axis where the curve of Latin Americans does, i.e., Latin Americans work in more types of occupations than Africans do, which explains why indexes that pay special attention to what happens at the bottom deciles take on higher values for Africans (as happens with Φ_a for $a = 0.1$ and 0.5).

5. Conclusions

We have found that women immigrants in Spain suffer a double segregation in the labor market. They are more segregated than both native women and immigrant men. Thus, even though immigrant women share with immigrant men a strong concentration in low-paid jobs and also a high presence in an occupation in which both groups have much higher employment rates than that of natives (i.e., *catering service workers*), the distribution of immigrant women across occupations shows a greater resemblance to that of other women than to that of other immigrants. Our study also suggests that in the Spanish labor market, occupational discrepancies by gender are more noticeable in the immigrant group than in that of natives. In fact, immigrants are concentrated not only in the lower-wage occupations but in those with the highest feminization/masculinization rates. In any case, we have found that the range of occupations in which there are almost no women immigrants is much wider than in those without men immigrants. In addition, immigrant women tend to concentrate in a single occupation (*domestic employees and other indoor cleaning personnel*), which employs 35.6 percent of them. For these reasons,

immigrant women are at least 26 percent more segregated than immigrant men, as shown in all the segregation indexes.

Our analysis of the distribution of women immigrants across occupations by region of origin suggests that the pattern of those women coming from the European Union clearly departs from that of the remaining subgroups since the EU women subgroup does not tend to concentrate in occupations with many other immigrant women. In fact, within the group of women immigrants, those from the EU display the lowest occupational segregation. On the contrary, occupational segregation seems particularly intense in the group of women from European countries outside the EU bloc (and also that of Asian women). Our study also suggests that Latin American women have a higher occupational segregation than African women do even though the range of occupations in which African women do not work is greater than that of Latin American women.

Certainly, the aforementioned tendency of women immigrant workers to concentrate in a low range of low-paid jobs has a negative effect on their well-being and also diminishes their future prospects, which should be a matter of concern for policy-makers and a reason for continued research in this matter.

APPENDIX

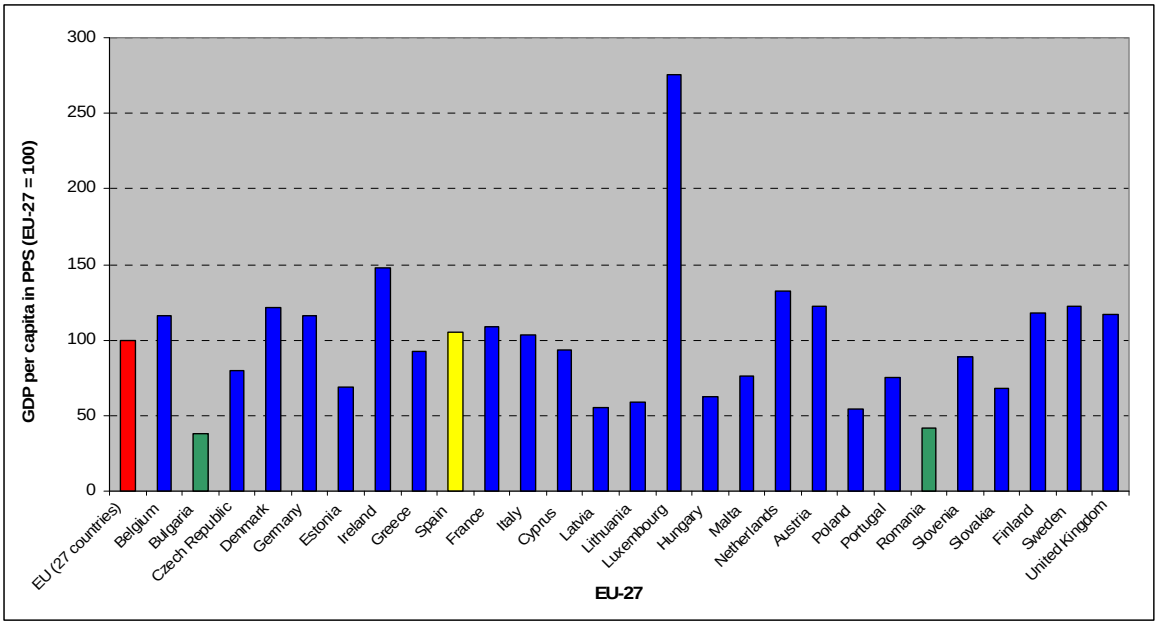

Figure 9. GDP per capita in the EU-27. Source: Eurostat (2010)

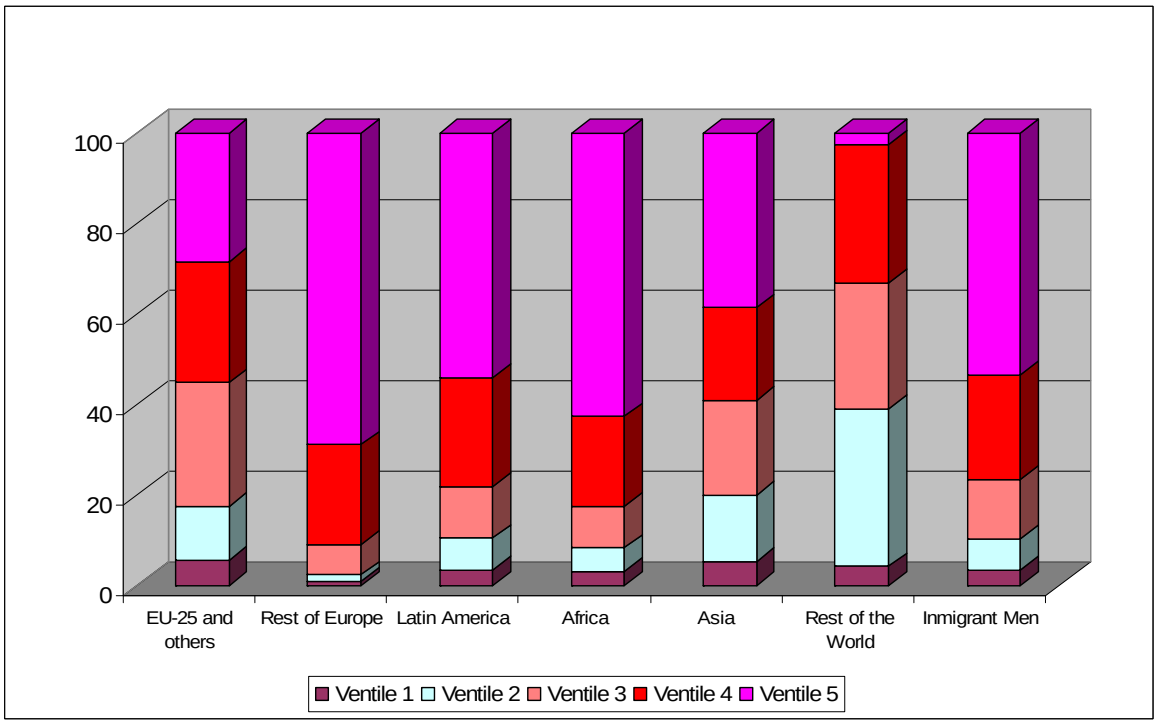

Figure 10. Distribution of immigrant men across ventiles by region of origin.

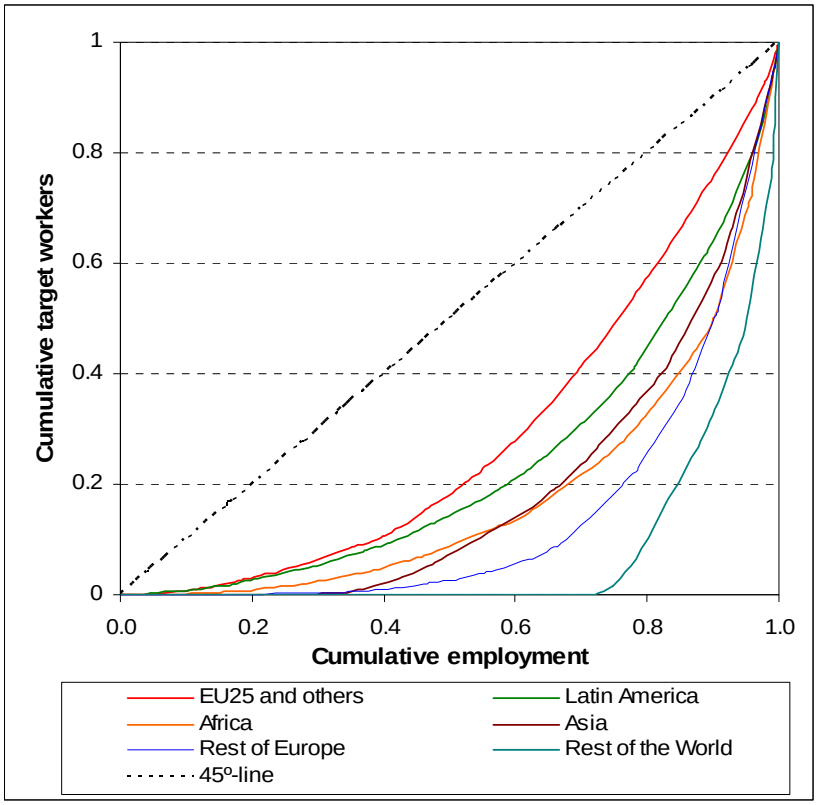

Figure 11. Occupational segregation curves of immigrant men coming from six large regions.

	Natives		Immigrants		EU-25 + others		Rest of Europe		Latin America		Africa		Asia		Rest of the World	
Branches of activity	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
1. Agriculture, livestock, hunting and forestry	2.8	4.9	3.1	7.2	1.9	3.1	6.8	11.2	2.5	5.3	1.6	12.1	0	2.1	0	0
2. Fishing	0.1	0.4	0	0.3	0	0.2	0.1	0.1	0	0	0	1	0	0	0	0
3. Extractive industries	0.1	0.5	0	0.4	0	0.6	0	0.1	0	0.3	0	1	0	0	0	0
4. Manufacturing industry	10.1	20.1	5.7	13.5	9.5	16	6	14.2	4.6	13.1	5.6	13.1	6	8.4	0	0
5. Production and distribution of electrical energy, gas and water supply	0.3	0.8	0	0.4	0.3	0.2	0	0.1	0	0.6	0	0.3	0	2	0	0
6. Construction	2	18.1	1.1	38.7	0.9	23.1	0.7	54.5	0.9	40.9	4.2	38.2	0.4	16.1	19.7	2.4
7. Commerce; repair of motor vehicles and domestic use articles	18.9	13.8	13.3	10.3	15.2	10.3	9.7	4.8	13.2	9.9	15.5	12.8	22	23	22.2	24.2
8. Accommodation and catering	7.7	4.7	19.7	9.8	11.4	11.2	24.4	3.6	18.7	10.4	29.9	9.3	29.2	29	0	0
9. Transport, storage and communications	3.4	7.9	3.1	6.1	6.9	10.9	1.5	5.9	2.6	5.9	3.7	3.1	2.7	5.9	0	8.4
10. Financial intermediation	3.1	2.5	1.2	0.5	3.1	1	0.5	0.2	1	0.6	1.6	0.1	0	0	0	0
11. Real estate and rental activities; business services	12.2	8.9	10.6	5.8	15.2	10.4	6.3	2.2	11.6	6.2	5.7	4.3	4	3.7	20	15
12. Public administration, Defence and compulsory Social Security	7.1	7	1.1	1.1	3.2	2.8	0	0.1	0.8	0.8	1.6	1.2	0	1.4	0	1.7
13. Education	10.1	3.7	3.3	1.3	13.1	4.9	0.2	0	1.3	0.7	4.8	0.7	2.2	0.4	29	18.7
14. Health and veterinary activities; social services	12.4	2.6	5.1	1.2	6.9	1.5	1.8	0.5	5.7	1.6	6.4	0.4	2.2	3.9	9.5	3.2
15. Other social activities and services provided to the community; personal services	5.5	3.6	4.3	2.6	6.7	3.4	3.5	1.5	4.2	2.7	1.9	2.3	3.8	2.2	0	26.5
16. Households that employ domestic personnel	4.3	0.4	28.4	0.9	4.9	0.5	38.6	1	32.9	1.2	17.6	0.3	27.7	2	0	0
17. Extraterritorial institutions	0	0	0.1	0	0.8	0	0	0	0	0	0	0	0	0	0	0

Table 5: Distribution of immigrant and native workers among branches of activity

The top 10 occupations with the highest presence of immigrant women (with employment ratios ≥ 1%)	Immigrant Women Employment / Employment (%)	Immigrant women distribution (%)	Native Women distribution (%)	Immigrant Men distribution (%)	Native Men distribution (%)	Employment ratio (%)	Employment Status $(w/\overline{w})$
91. Domestic employees and other indoor cleaning personnel	38.3	35.6	10.8	1.5	0.5	6.6	0.60
50. Catering services workers	22.0	15.0	5.0	7.4	2.8	4.8	0.71
51. Personnel services workers	15.3	8.5	8.4	0.6	1.0	4.0	0.79
45. Employees in direct contact with the public in travel agencies, receptionists, telephone operators	13.5	2.0	1.9	0.4	0.5	1.0	0.67
97. Manufacturing industry laborers	13.5	2.0	1.2	1.1	0. 8	1.0	0.63
46. Cashiers, tellers and other similar personnel in direct contact with the public	11.6	2.0	2.2	0.4	0.6	1.2	0.93
94. Agricultural and livestock and fishing laborers	11.5	2.6	1.0	5.6	1.1	1.6	0.62
53. Retail workers and the like	9.1	6.4	9.1	1.9	2.6	5.0	0.82
78. Food, beverage and tobacco industry workers	8.5	1.2	1.0	1.3	0.9	1.0	0.73
43. Assistant clerks (without customer service tasks not classified previously)	5.5	1.6	4.1	0.4	1.0	2.1	0.71
Total:		77	45	21	11	28	
The bottom 10 occupations with the lowest presence of immigrant women (with employment ratios ≥ 1%)	Immigrant Women Employment / Employment (%)	Immigrant Women distribution (%)	Native Women distribution (%)	Immigrant Men distribution (%)	Native Men distribution (%)	Employment ratio (%)	Employment Status $(w/\overline{w})$
85. Locomotive machinist, operators of agricultural machinery and mobile heavy equipment, and seamen	0	0	0.1	1.8	2.3	1.3	0.93
71. Workers at structural construction works and the like	0.1	0.1	0.1	16.8	7.1	5.1	0.76
76. Mechanics and adjusters for electric and electronic machinery and equipment	0.1	0	0.1	2.5	4.6	2.6	1.00
96. Construction laborers	0.1	0	0.2	11.8	2.5	2.4	0.66
75. Welders, auto body workers, metal structure fitters, blacksmiths, tool manufacturers	0.2	0	0	3.2	2.8	1.7	0.95
72. Workers dedicated to finishing constructions and the like (painters and related workers)	0.3	0.1	0.2	7.1	6.1	3.8	0.76
86. Drivers of vehicles for urban or road transport	0.5	0.2	0.4	4.7	6.5	3.8	0.79
60. Skilled agricultural workers	0.9	0.2	0.7	1.3	2.1	1.4	0.76
30. Physical sciences, chemistry and engineering technicians	1.0	0.4	1.7	1.3	3.8	2.6	1.36
40. Accounting, finance services employees, and production and transport support services employees	1.3	0.3	1.6	0.7	2.0	1.7	1.02
Total:		1	5	51	40	26	

Table 6: Distribution of immigrant and native workers among occupations with the highest and the lowest presence of immigrant women

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