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EHES WORKING PAPERS IN ECONOMIC HISTORY | NO. 3

The Labor Market Integration of Migrants: Barcelona, 1930

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Abstract

Very few empirical studies have analyzed the labor market performance of internal migrants in the nineteenth and early twentieth centuries. Using a new dataset, this article examines the occupational attainment of migrants, mostly internal migrants, in the city of Barcelona. We find that, in comparison with natives, the occupational outcome of migrants is partly explained by differences in labor market experience and skills. Nevertheless, other factors also appear to play an important role. Estimates, moreover, do not suggest the existence of improved economic assimilation over time. The results indicate that at least some groups of migrants faced barriers to occupational mobility.

JEL codes: J24, J61, N34

Keywords: labor market integration, migrants, occupations, historical labor market

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Introduction¹

The labor market adjustment of international immigrants in the nineteenth and early twentieth centuries has been intensively studied in recent years.² However, little attention has been paid to labor market incorporation among internal migrants. Economic growth and structural change in Europe generated an increase not only in emigration, but also in internal migration. Urban growth following World War I, although less pronounced than in previous years, tended to continue throughout the interwar period, producing concern about the rural exodus and its consequences.³ Rates of internal migration in the interwar period were even higher in some Southern European countries to which industrialization had arrived relatively late.⁴

Only two studies have empirically examined the integration of internal migrants into European urban labor markets. In the first of these, Jeffrey G. Williamson utilized the 1851 *Census of Great Britain* to compare the performance of male migrants from rural and urban areas, as well as from Ireland and other countries, with those born in a sample of cities.⁵ Timothy J. Hatton and Roy E. Bailey revisited this issue, using the 1929-1931 *New Survey of London Life and Labor* to compare the performance of male in-migrants with those born in London.⁶ Both studies indicate that the experience of migrants tended to match that of natives. With the exception of the Irish, migrants did not earn less than non-migrants in mid-nineteenth century Britain. Migrants in interwar London even enjoyed slightly higher earnings and lower unemployment than natives, a difference attributable to individual characteristics, particularly skills.⁷

¹ We are especially grateful to José Luis Oyón, who kindly provided us with the main database we used. We also received methodological and bibliographical suggestions from David Duffy, Alexander Elu-Terán, Alfonso Herranz, José Miguel Martínez Carrión and Jerònia Pons. The Ministry of Science and Innovation (research project ECO2009-07796) has provided financial assistance. This version was written while J. Silvestre was Visiting Scholar at the Office of Population Research (Princeton University).

² See Hatton (2010), p. 949-953, and the studies reviewed therein.

³ Hohenberg and Lees (1985); Moch (1995); Lucassen (2005).

⁴ For Italy and Spain, see Treves (1976) and Silvestre (2005).

⁵ Williamson (1990).

⁶ Hatton and Bailey (2002).

⁷ Jason Long (2005), in his comparison of rural-urban migrants and rural non-migrants in Britain in the latter half of the nineteenth century, also indicates positive selection of migrants.

The present article offers new evidence on the extent of the economic assimilation of internal migrants in the past.⁸ Except for the case of Britain, our understanding of this issue is still insufficient. In any historical period, the process of migrant integration in monetary, employment or occupational terms is important from both the economic and social perspective. The success of migrants strongly determines their contribution to the economic growth of host societies. Furthermore, a failure to integrate into the new labor market may lead to exclusion and, finally, a deterioration of social cohesion.

The city of Barcelona in 1930 provides an opportunity to extend the analysis of the economic assimilation of internal migrants to other European countries. Like other cities located on the Spanish Mediterranean coast, Barcelona had been receiving a certain amount of migration since the sixteenth century.⁹ Early industrialization in the nineteenth century, based largely on textiles, led to high in-migration. Due to the more diversified growth in the industrial and service sectors, in-migration increased dramatically from the end of the nineteenth century to the early 1930s. The population of Barcelona doubled between 1900 and 1930, due principally to the arrival of migrants. Population size in 1930 (1,005,565) was similar to that of Birmingham, Budapest, Glasgow or Rome.¹⁰ Data provided by the population census show that the proportion of the population born outside the city of Barcelona, 40.8 percent in 1900, reached 56.1 percent in 1930.¹¹

This article examines the issue of the economic assimilation of migrants by using occupation as an indicator of labor market position. Those born in Barcelona constitute our reference group. We utilize the 1930 register of inhabitants (*Padrón municipal de habitantes*) of Barcelona. As in other historical studies, the evidence in the present article relies on cross-section data; however, some of the limitations associated with the use of single cross-section estimations can be mitigated. In comparison with the two studies cited for the case of Britain, the main methodological innovation is that information on the year of arrival is available. The identification of the time spent in the place of destination permits the extent of the economic assimilation process to be assessed, once skills, socio-demographic characteristics and other individual features are taken into account.

⁸ We refer to labor market *integration* or *incorporation* and economic *assimilation* indistinctly. For detailed definitions of these terms in economics, sociology and history, see Borjas (1999) and Alba and Nee (1997).

⁹ Reher (1994); Camps (1995).

¹⁰ Mitchell (1992).

¹¹ Dirección General del Instituto Geográfico y Estadístico (1902); Dirección General del Instituto Geográfico Catastral y Estadístico (1932).

The present study suggests that the labor market integration of male migrants in Barcelona was not as smooth as in British cities. The findings provide support for the hypothesis that migrant status reduced the possibilities of entering certain occupations. Differences between the occupational attainment of natives and migrants cannot be explained solely by differences in terms of experience, skills and demographic characteristics. The outcome of migrants also depends on characteristics related to their place of origin, as well as potential opposition to non-natives in the host society. The results, moreover, do not suggest the existence of an improvement over time in the economic assimilation process.

In-migration in Barcelona, 1860s - 1930

The economic development of the city of Barcelona in the nineteenth century was based on the cotton textile industry and other consumer industries such as food processing. At the turn of the century, small workshops intensive in skilled labor were still predominant. This situation changed from the beginning of the twentieth century onwards. In particular, the city's economy grew due to Spanish neutrality during World War I and public investment and international capital inflows during the 1920s.¹² The industrial and services sectors became more diversified. Among the new expanding industries were metalworking, woodworking, chemicals and electricity generation. Construction and commerce were large employers. The city expanded its territory, sometimes by means of annexing nearby towns, and changed its urban landscape by investing in land transport infrastructure and port modernization. This transformation reached a symbolic zenith with the celebration of the 1929 International Exhibition. It was the consolidation of the growth process which may have caused the impact of the Crash of 1929 to be mild (with the notable exception of the construction sector).¹³

Migrants responded to employment opportunities and relatively high wages in the buoyant labor market of Greater Barcelona. According to new estimates, real wages in Barcelona were among the highest in Spain during the 1910s and 1920s.¹⁴ Simulations suggest that in comparison with Madrid, the other main destination for internal migrants, Barcelona compensated for relatively high moving costs, related to its peripheral location in Spain, by high wages.¹⁵ Barcelona also offered a wider range of non-agricultural job opportunities than other potential destinations, a decisive factor behind internal migrations in

¹² Sudrià (1992); Calvo (1995); Catalán (1997); Sánchez (2007).

¹³ Sánchez (2007), p. 17.

¹⁴ Rosés and Sánchez-Alonso (2004).

¹⁵ Silvestre (2005). For the importance of moving costs in Spanish internal migrations, see Pons et al (2007).

Spain in the early decades of the twentieth century.¹⁶ Municipal data available from 1900 onwards reveal that Barcelona received more than 400,000 in-migrants between that year and 1930.¹⁷ Data from population censuses and statistical yearbooks (also available from 1900 onwards), re-sorted and presented in Table 1 show that net migration accounted for almost all population growth in Barcelona in the same period.

[Table 1]

The population census of 1930 indicates that 563,841 inhabitants had been born outside Barcelona.¹⁸ The area of influence of Barcelona is highlighted on the Map. Thirteen eastern provinces accounted for 77 percent of in-migration in the city of Barcelona: Barcelona (province), Tarragona, Gerona, Lerida, the Balearic Islands, Castellon, Valencia, Alicante, Huesca, Zaragoza, Teruel, Murcia and Almeria.¹⁹ Among the remaining Spanish provinces, the province embracing the capital city of Madrid was the main origin of migrants. Barcelona, as a growing Mediterranean port and a recipient of international capital flows, was able to attract certain numbers (26,659) of immigrants from other countries. The main places of origin, from among 56 countries, were France, Germany, Cuba, Argentina, Italy and Britain.²⁰

[Map]

An interesting feature of migration flows to Barcelona is that the area of influence of the city increased continuously over time. Early migrants came predominantly from nearby

¹⁶ Simpson (1995); Silvestre (2005). For the specific case of women, see Borderías (2002).

¹⁷ Tatjer (1995), pp. 100-101.

¹⁸ In Madrid on the same date, 600,726 residents had been born outside the city. Two other relatively large centres of attraction were Seville and Bilbao, with approximately 100,000 non-native born inhabitants each. The calculations presented in this paragraph are based on data from the Dirección General del Instituto Geográfico Catastral y Estadístico (1932), pp. 388-409.

¹⁹ The spatial concentration of provincial out-migration to Barcelona was 50 percent higher than in the case of Madrid. The coefficient of variation of provincial out-migration to Barcelona and Madrid is 1.48 and 0.95 respectively. The number of observations, 50, refers to out-migration from 49 Spanish provinces plus out-migration from the same province. Results do not vary substantially if immigrants from other countries are included.

²⁰ Tatjer (1995).

villages and towns belonging to the province of Barcelona, whereas later migrants tended to arrive from the southeastern provinces of Murcia and Almeria. Although data to estimate migration flows in the nineteenth century are scant, it has been argued that migration to the city of Barcelona on a significant scale may reach back to the 1860s.²¹ Most migrants between the 1860s and the end of the century originated from the province of Barcelona and the remaining Catalan provinces (Tarragona, Gerona and Lerida). A number of migrants also came from the Balearic Islands.²²

The area of influence of Barcelona expanded considerably from the beginning of the twentieth century onwards. Initially, this was the result of the increase in the arrival of migrants from the regions of Valencia (composed of the provinces of Castellon, Valencia and Alicante) and Aragon (comprising the provinces of Huesca, Zaragoza and Teruel).²³ Migrants with such origins had been arriving in Barcelona constantly since the 1880s. The predominance of migrants from the Catalan provinces began to decline in the 1910s. Scholars have indicated certain characteristics of migration prior to the First World War, such as its relatively slow, albeit continuous, pace and the urban origin of some migrants, in addition to the abundance of temporary migrants and stage-migrants, who ended up in Barcelona after a “learning-by-moving” process in which they gained information and experience.²⁴

Some features of migration flows changed from the First World War onwards, when the number of migrants from the more distant provinces of Murcia and Almeria increased. The sharp rise in migration from these provinces was, to a certain extent, sudden and unexpected.²⁵ It was the result of a *push* factor, namely the crisis in the mining industry. Mines in southeastern Spain had been employing agricultural workers, who floated between the two sectors, particularly during the mining expansion of the nineteenth and early twentieth centuries.²⁶ Resource depletion, labor-saving technological change and the reduction of international demand may have caused many of these temporary migrants to prefer direct migration to Barcelona to the declining mining areas. A further number of agricultural workers may have also migrated from the province of Almeria to Barcelona in the second half of the 1920s due to the US ban on Spanish agricultural imports, such as table

²¹ Vidal (1979).

²² Vidal (1988). The distance between Barcelona and the port of Palma de Mallorca is 47km.

²³ Arango (1976); Aracil et al (1996); Oyón et al (2001).

²⁴ Camps (1995); Llonch (1996); Mirri (1996).

²⁵ Vilá (1958-9); Tatjer (1980); Oyón et al (2001).

²⁶ Martínez-Soto et al (2005); Silvestre (2007).

grapes.²⁷ Some researchers have stressed the lack of urban skills of these often illiterate mining and agricultural workers, who responded to the *pull* of the growing public and private construction sector in Barcelona.²⁸

The spread of the migratory area under the influence of Barcelona occurred at the same time as the consolidation of Catalan nationalism. Among certain groups, the settlement of non-Catalan migrants caused resentment, in a manner that resembles the experience of European cross-border immigrants. Non-Catalan migrants, particularly those coming from Murcia and Almeria, often had to confront negative stereotypes, like Italian workers in France and Switzerland, (German) Poles in the Ruhr Area and the Irish in Great Britain.²⁹ Economic historians have argued that the basis for opposition to in-migration tends to be cultural prejudice and labor market competition.³⁰ In the Catalan case, as in other parts of the world in which the fertility rate had been declining since the late nineteenth century, concern about the size and “quality” of the population also permeated attitudes toward in-migration.³¹

There is firsthand evidence to suggest that due to labor market competition, Valencian and Aragonese migrants in Barcelona suffered from a certain degree of rejection on the part of Catalan workers.³² It has been argued that organized labor often viewed these early non-Catalan workers with distrust.³³ Non-Catalan migrants were sometimes regarded as culturally backward and uncouth.³⁴ However, in general terms anti-migrant feeling in Barcelona was probably modest before the 1910s. As summarized by a political historian, the as yet relatively low numbers of non-Catalan migrants and their long and gradual process of settlement, and the fact that many of them spoke or understood the Catalan language (or used some variation), may have facilitated assimilation.³⁵

²⁷ Sánchez Picón (1992); Pinilla and Ayuda (2009).

²⁸ See, for example, Vilá (1958-9) and Sentís ([1932] 1994). Improvements in the transport system during the 1910s and 1920s may also have facilitated migration to Barcelona; see Herranz (2005).

²⁹ Leo Lucassen (2005) has studied these three cases in detail.

³⁰ Foreman-Peck (1992); Goldin (1994); Hatton and Williamson (2005). Because almost all migrants in Barcelona were *internal*, the fiscal effect of immigration might have been slight. Spanish welfare benefits, moreover, were low at that date.

³¹ For Europe and the US, see Bardet and Dupâquier (1999), Leonard (2005) and Higham ([1955] 1992).

³² As reported by the French sociologist Jacques Valdour (1919), pp. 77-78, 226-252, 287-292, 322, 369, who posed as a worker in his study of the conditions endured by the Spanish working class.

³³ Kaplan (1992), pp. 60-61.

³⁴ Mirri (1996).

³⁵ Termes (1983), pp. 219-222.

Attitudes toward non-Catalan migrants hardened in the 1910s and 1920s. Growing migration from Murcia and Almeria involved large numbers of unskilled workers, who were easily recognizable by their Spanish (non-Catalan) language. In spite of these groups not being the most numerous among migrants, they attracted the majority of prejudices. Murcian and Almerian, in particular, were seen as lazy, irresponsible and difficult to integrate in the Catalan society and economy.³⁶ Some nationalist elites employed ethnic and linguistic arguments to allege that such population flows were problematic.³⁷ Murcian, Almerian and other groups of migrants were often accused of importing ideas of violent revolution or anarchism from their regions of origin. Socialist- and communist-inspired organized labor sometimes referred to migrants' lack of commitment and their preference for anarchist individualism.³⁸

The most elaborate reasoning concerning migration to Barcelona and Catalonia was provided by Josep A. Vandellós i Solà, a London-educated statistician, demographer and economist, who was also a disciple of Corrado Gini and a sympathizer of eugenics.³⁹ In a context of declining birth rates, Vandellós i Solà considered migration from the rest of Spain as “necessary” to satisfy labor requirements in expanding industries. However, the author warned of the arrival of “excessive” flows of, particularly, Murcian and Almerian, who he alleged to be difficult to assimilate due to their ethnic characteristics. In order to reduce beggary and social unrest, and to lessen the impact on not only Catalan culture and language, but also on wages and the occupational attainment of native workers in the Greater Barcelona labor market, Vandellós i Solà proposed, among other measures, the regularization of migration flows. However, profound political and social opposition, and the lack of jurisdiction on the part of the Catalan (regional) parliament, prevented the establishment of migration quotas and “Catalanization” (acculturation) policies.⁴⁰

The 1930 *Padrón Municipal de Habitantes* of Barcelona as a source for the study of immigration

³⁶ See, for example, Maluquer i Sostres (1965), p. 156.

³⁷ Termes (1983), pp. 222-225; Elham (2010), pp. 13-14; 56; 67-69.

³⁸ For a critical view of these stereotypes, see Termes (1983), Tatjer (1995), Smith (2002) and Oyón (2008).

³⁹ Vandellós i Solà (1935a, [1935b] 1985). For the importance and repercussion of the author's works, see Termes (1983), Pascual (1985) and Tatjer (1995).

⁴⁰ Vandellós i Solà (1935a), pp. 18, 97, 129-146, 165, 169-170, 188-194, ([1935b] 1985), p. 140; Termes (1983); Tatjer (1995).

The purpose of this article is to analyze the labor market integration of migrants. In order to compare the performance of in-migrants with those workers born in Barcelona, the present study used the 1930 *Padrón Municipal of Habitantes* (register of inhabitants) as its main source. This population register comprises 800 volumes, of approximately 300 pages each. Each page (card) provides information for one household, and was completed by one of the 239 municipal agents who conducted the population register. We used the computerized, spatially representative 5-percent sample, accounting for 12,825 households, drawn by the social historian José Luis Oyón and his collaborators.⁴¹ Each card includes, among others, the following items regarding household members: relationship to head of household, marital status, age, sex, literacy, occupation, municipality of birth, and years since arrival in Barcelona.

From the database we took all male heads of households from the age of 18 (10,263 individuals). Members of the armed forces were excluded. Women's characteristics in the *Padrón* tended to be more poorly reported than men's.⁴² Substantive information including place of birth and year of arrival and occupation is only available for 568 female heads of households, of whom 350 are widows. We decided to focus on males, which permits comparison with studies about Britain. The legal retirement age in Spain in 1930 was 65. According to the 1930 census of population, however, the participation rate of older people was 83.27 percent.⁴³ We decided not to reject 513 cases in which age was above 65. 1,027 cases were excluded because information regarding some of the relevant items was incomplete.⁴⁴ The final database totaled 9,236 individuals.

The *Padrón* indicates the municipality of birth. According to our sample, 69.0 percent of the population was born outside the city of Barcelona. This figure is higher than the 56.1 percent provided by the 1930 census of population. The gap between the two rates must be attributed to the fact that the *Padrón* is a list of heads of households. Co-resident children

⁴¹ The original source is available from the Barcelona Municipal Archive. For a full description of the source and the 5-percent sample, see Oyón et al (2001) and Oyón (2008), pp. 21-61. See also Doménech and Elu-Terán (2008), who drew a 1-percent sample from the same source in their study of women's paid work, and Tatjer (1980), who drew a sample of migrants from particular provinces.

⁴² On this issue, see Doménech and Elu-Terán (2008).

⁴³ Some of these people were declared to be "semi-retired" from the labor market. Thanks are due to Alexander Elu-Terán for information about retirement ages and their meaning.

⁴⁴ There was no standard case of incomplete information. Unreported information often concerned one or more of the following items: age, illiteracy, municipality of birth, year of arrival and occupation.

born in Barcelona are not therefore considered as a unit of analysis in the *Padrón*. The correlation between the number of individuals from varying places of origin recorded in the census and the *Padrón*, however, is outstandingly high, 0.96.⁴⁵ This result suggests that although our source overestimates the size of in-migration, it correctly reflects its structure. We utilized the municipality of birth to divide the database into eight groups, one for the Barcelona-born, six for those born in the rest of Spain and one for those born in other countries. We also utilized this information to determine the rural or urban nature of each migrant.

For the purposes of this article, the main variable is occupational attainment. Studies of the integration of migrants into the labor markets of different epochs have normally used earnings, employment status or occupation. Municipal population registers for early twentieth century Spain may or may not include some information on wages. The 1930 *Padrón* of Barcelona provides systematic information about occupation, but not wages. Using wages aggregated at the level of occupation, included in the *Estadística de salarios y jornadas de trabajo, referida al periodo 1914-1930* (Wages and Hours of Work Statistics, 1914-1930), a compilation of data published by the Spanish Ministry of Labor, we attempted to convert occupation into a crude estimate of individual wages, following the method proposed by Jeffrey G. Williamson.⁴⁶ However, we abandoned this approach due to the lack of correspondence between occupational categories and the insufficient variation of imputed wage data.⁴⁷ Moreover, the *Padrón*, as often occurs with historical datasets, is not a reliable source for the study of employment and unemployment. It may have been the way municipal agents collected information which caused very few individuals to be declared as unemployed. Unemployment rates in the city and province of Barcelona in the late 1920s appeared nevertheless to be very low. One year after the Crash of 1929, the rate of unemployment in the city of Barcelona was 4.3 percent.⁴⁸

Our final sample records 317 different occupations. We classified each occupation using HISCLASS, which is based on HISCO. HISCO is a historicized version of the International Labor Organization's 1968 *International Standard Classification of*

⁴⁵ The number of observations, 53, refers to natives born in Barcelona city (1); those born in Barcelona province (1); those born in Spanish provinces (49); those born in Spanish possessions in North Africa (1); and those born in other countries (1).

⁴⁶ Williamson (1990).

⁴⁷ See similar problems in imputing male wages in Doménech and Elu-Terán (2008).

⁴⁸ For London in the same year, this figure was 8.01 percent. See Soto (1989) and Hatton and Bailey (2002).

Occupations (ISCO). HISCO and HISCLASS were created by researchers associated with the International Institute of Social History in Amsterdam (the History of Work Information System project).⁴⁹ HISCO is an occupational classification system providing a list of 1,600 occupations. HISCLASS transforms these occupations into a convenient number of social classes by means of a set of theoretical and fixed criteria. The main dimensions of social class in HISCLASS are the manual/non-manual division, the skill level, the degree of supervision, and the economic sector.

The original HISCLASS taxonomy comprises twelve social classes. For operational (econometric) purposes, and to avoid very few observations in some classes, we created a classification of four social classes.⁵⁰ Table 2 specifies the conversion of the twelve HISCLASS groups (second column) into our four categories (first column). Ad hoc allocation of occupations, as in the original HISCO to HISCLASS transition, was unavoidable in some cases. We used two additional items included in the *Padrón*, home ownership and the presence of domestic servants, as further criteria in dubious cases.⁵¹ The last column in Table 2 indicates the most common occupation in each of our four final categories. One feature of the data is the vagueness of the most common occupation, *jornalero*, literally meaning day laborer (4,594 observations of 9,236). However, this term tended to refer to a common type of worker at that time and place. *Jornaleros* did not usually have any specific qualification, and often floated between occupations, economic sectors and even locations.⁵²

[Table 2]

The source has two potential shortcomings, frequent in many studies of immigration in the past and present. Both are related to the fact that the *Padrón* is a single cross-section

⁴⁹ The HISCO and HISCLASS schemes, including comparisons with previous and similar occupational classification systems, and the re-examination of procedures by external consultants, are explained in detail in Mass and Leeuwen (2005) and Pélissier et al (2005). Detailed information can also be found at the International Institute of Social History web site (<http://historyofwork.iisg.nl/>).

⁵⁰ Mass and Leeuwen (2005) and Pélissier et al (2005) follow the same strategy. Examples of research into class or the occupational attainment of migrants using a reduced number of categories are Green (1999), Long (2005) and Barrett and Duffy (2008).

⁵¹ For a similar strategy, see Long (2005).

⁵² For this type of worker, see Tatjer (1980), p. 129, and Doménech and Elu-Terán (2008), p. 380.

dataset.⁵³ Firstly, although it is not possible to determine the precise figure, a number of migrants, especially recent migrants, may have been temporary migrants, often working as *jornaleros* for months or years in the buoyant construction sector in Barcelona and then returning to their (often rural) places of origin.⁵⁴ Our source, therefore, may include early cohorts of self-selected permanent and probably more successful in-migrants, and recent cohorts providing a more representative selection from the migrant pool. If the least successful migrants had a greater propensity to return, the cross-section analysis will provide upward biased estimates. Although tentative, calculations based on the population censuses nevertheless suggest that temporary migrants were far less numerous than permanent migrants in Barcelona in 1930 and preceding years.⁵⁵

Second, as often in research into international migration, cross-section datasets implicitly assume that the labor market abilities (i.e. “quality”) of successive cohorts of migrants have not changed over time. Changes in circumstances in places of origin or destination, in the possession of human capital, as well as in unobserved individual qualities, such as capacity and motivation, which do not form part of the skills measured, may influence the process of positive or negative selection of migrants. Consequently, cross-section estimates will be biased downward or upward. It would be no exaggeration to say, however, that in comparison with international migration, potential economic and institutional changes in the sending and receiving areas, in addition to changes in the type of migrant, may be less relevant in the context of internal migration, usually less diverse.

The lack of longitudinal data, including pre-migration (origin) data is, however, a limitation to be borne in mind when interpreting our empirical evidence, all the more so considering that our sample records in-migrants over a long period. Nonetheless, as the source includes arrival year data, it is possible to analyze whether occupational attainment varies with the duration of residence of migrants in the place of destination.

Descriptive statistics

The descriptive statistics for natives and migrants are given in Tables 3 and 4. Table 3 reports the distribution of individuals across occupational categories. Migrants are divided

⁵³ On cross-section dataset problems, see Borjas (1985), pp. 466-467, and Chiswick et al (2005), pp. 332-333.

⁵⁴ As in other European countries in the heyday of their industrialization, rural-urban temporary migration in Spain during the 1920s tended to increase in places which were also main destinations for permanent migrants, such as Barcelona. See Silvestre (2007) and the works cited therein.

⁵⁵ Silvestre (2007).

into geographical groups based on the main source regions and provinces described above. A further group is comprised of immigrants from other countries. Natives and migrants from the province of Barcelona, the remaining Catalan provinces and the Balearic Islands, and particularly international immigrants, are less concentrated in the *Unskilled, Manual* category. Among the other groups of migrants, those from Murcia and Almeria are the most heavily concentrated in this category. The trend tends to reverse for the other categories. With some exceptions, natives, migrants from Catalonia and the Balearic Islands and immigrants from other countries tend to show the highest degrees of concentration in the two *Low/Medium* categories and, particularly, the *High, Non-Manual* category.

[Table 3]

Table 4 suggests that differences in certain characteristics may explain at least part of the differences in the distribution of individuals across occupational categories. Firstly, the average age of those groups of migrants most likely to be in the *Unskilled, Manual* category (Valencia, Aragon, and Murcia and Almeria) are lower than the average age of more successful groups of migrants. Secondly, the differences in literacy rates can be substantial, particularly between migrants from Murcia and Almeria and the remaining groups of migrants and natives. Thirdly, the concentration of individuals in the *Unskilled, Manual* category and, on the other hand, in the two Non-Manual categories, may also be partly explained by differences in duration of residence. Years of arrival have been grouped into four periods (this criterion is explained below). Table 4 shows that certain groups of migrants that include many individuals arriving in the 1910s and 1920s, such as those from Valencia, Aragon, and Murcia and Almeria, also had lower average literacy rates.⁵⁶

[Table 4]

Table 4 also includes, for each group of Spanish migrants, the percentage of those born in rural areas. Given that literacy may be an incomplete proxy for human capital accumulation, our regressions employ information about the rural/urban origin of migrants as

⁵⁶ Average years in Barcelona for each group are: Rest of Barcelona: 24.3; Rest of Catalonia + the Balearic Islands: 22.8; Valencia: 19.8; Aragon: 18.1; Murcia and Almeria: 13.5; Rest of Spain: 14.9; Other Countries: 17.5.

a further indicator of the degree of transferability of pre-migration (i.e. place of origin) skills to the labor market in the destination. We obtained the size of each municipality from the population census closest to the migrant's year of arrival in Barcelona. For each migrant, municipality of origin was considered to be urban if its population exceeded 10,000 inhabitants.⁵⁷ Table 4 indicates that the majority of migrants were born in rural areas. We must be cautious about the low urbanization rate for the group of migrants born in the provinces of Murcia and Almeria. Particularly in the case of the province of Murcia, rural populations surrounding urban centers were often classified as urban. Some "urban" areas, in fact, comprised a certain population employed in the agricultural sector.⁵⁸ The final row in Table 4 reports the distribution of individuals across places of origin.

In short, the descriptive statistics suggest that certain differences in average characteristics may explain, at least partially, differences in the occupational attainment of natives and migrant groups. It may have been the case that the combination of younger ages, relatively short residence periods and lower levels of suitable human capital contributed to the overrepresentation of migrants in some categories. In the next section, we use multivariate analysis to disentangle the relative contribution of each of these and other factors to occupational attainment. We combine relevant variables and controls to evaluate the extent and causes of migrant integration into the labor market.

Hypotheses and model specification

The key issue in our analysis is the occupational distribution of migrants and its evolution.⁵⁹ At the time of arrival in the place of destination, migrants may suffer a disadvantage in the labor market in comparison with similar natives. Differences in demographic characteristics, as well as in the level and type of human capital, can explain part of the difference. Skills, for example, may not be fully transferable to the destination

⁵⁷ The definition of urban areas may vary between countries, as well as over time within the same country. We have chosen a standard criterion suitable for Spain in the early twentieth century, as explained by Tafunell (2005), pp. 457-458, and the studies reviewed therein. Census dates are 1877, 1887, 1900, 1910, 1920 and 1930. Dirección General del Instituto Geográfico y Estadístico (1883, 1891, 1902, 1913); Dirección General de Estadística (1922); Dirección General del Instituto Geográfico Catastral y Estadístico (1932).

⁵⁸ Such was the case of important places of origin such as Murcia (the capital city), Lorca, Cartagena and Cieza. See also Reher (1989).

⁵⁹ We follow the line of seminal works on the assimilation of migrants (particularly concerning earnings), such as those by Chiswick (1978) and Borjas (1985) and subsequent literature.

labor market, if the sending and receiving areas differ in economic, institutional or cultural terms. Moreover, recent migrants usually have less information about the labor market and the host society in general.

Differences in the labor market position of in-migrants and similar natives, however, may be eroded as time of residence extends. It has been argued that migrants are able to adapt their stock of human capital to the requirements of the new labor market. The pace at which migrants converge with their native counterparts also depends on the process of acquiring information about the labor market, for example by means of migration networks.

To compare the occupational attainment of male natives and migrants in the city of Barcelona in 1930, we estimated multinomial logit (MNL) models. The MNL model is the most frequently used regression model when the outcome is *nominal*, that is, the categories are assumed not to have a natural order.⁶⁰ The ranking of occupations is not easy at the empirical level, since jobs have attributes that are difficult to compare. In our classification of four occupational categories, it appears to be clear that *Unskilled, Manual* and *High, Non-Manual* were categories at, respectively, the lowest and the highest levels of the social class distribution. The situation is less evident, however, regarding the order of the two intermediate cases; *Low/Medium, Non-Manual* occupations may have a higher skills content, or even higher status, than *Low/Medium, Manual* occupations. Due to the lack of wage information, however, it is not possible to determine whether wages in non-manual occupations were higher or lower than wages in non-manual occupations.⁶¹

To check the robustness of the empirical findings obtained via MNL models, we also estimated ordered probit models. For this purpose, occupational categories were ranked as follows: First, *High, Non-Manual*; Second, *Low/Medium, Non-Manual*; Third, *Low/Medium, Manual*; and Fourth, *Unskilled, Manual*. This classification is based principally on the manual/non-manual division. It is assumed that non-manual jobs are preferred to manual jobs, and also that the *Low/Medium, Non-Manual* category reflects higher status or prestige than the *Low/Medium, Manual* category, as confirmed by differences between occupational categories regarding home ownership and the employment of domestic servants.

⁶⁰ For a formal description of the MNL model and its employment in the field of occupational choice, see, for example, Wooldridge (2002). For an empirical application, see Green (1999).

⁶¹ As explained by Chiswick and Miller (2007) and the works reviewed therein, earnings are often the main criterion (or one of the most important) for the classification of occupational categories. See also Minns (2000).

Supplemental analysis, using ordered probit models (which are not reported here), led to very similar conclusions to those obtained using MNL models.⁶²

The MNL model makes the assumption known as the *independence of irrelevant alternatives*. This means that adding or deleting alternatives (i.e. occupational categories) does not affect the odds among the remaining alternatives. Tests of the independence of irrelevant alternatives tend to suggest that the application of MNL models to our data is appropriate.⁶³

The determinants of occupational attainment in the regression models include age (in 1930), age at arrival, family structure variables, human capital attributes, period of arrival, regional (or provincial) origin, and the extent of migration networks.

Age may be used as a proxy for experience, whereas the inclusion of age square captures the possible existence of decreasing returns to experience in occupational attainment.⁶⁴ Age at arrival and age at arrival square are included to reflect the fact that young people migrating may face different opportunities in the place of destination than those who migrate as adults. Research has usually found that migrants arriving young tend to achieve higher socio-economic status, including better occupations.⁶⁵ The quadratic term allows for the effect of one year in Barcelona to be greater at an early age.

Marital status (dummy variables for single, married and widower) and the number of children under 16 (living in the same home as the respondent) are also included. It is true that family structure variables may be determined simultaneously with labor market outcomes. For example, higher occupational attainment for married men may be related to positive selection into marriage, but may also be the result of the productivity-enhancing effects of

⁶² These regressions, and all the regressions commented below but not reported, are available from the authors by request.

⁶³ The Hausman-McFadden test and the Small-Hsiao test tended to coincide in not rejecting the assumption at the usual levels. Discrepancies between the two tests are, however, possible. In any event, as the independence of irrelevant alternatives is a very restrictive assumption, McFadden (1973) and Ameniya (1981) suggest that the MNL model is appropriate when the outcome categories are plausibly assumed to be different.

⁶⁴ For the case of London, Hatton and Bailey (2002), in addition to age and age square, use “age-minus-x” variables to capture steps (at age x) in the shape of age-earnings and age-unemployment observed profiles. Because our outcome variable is nominal (four categories), instead of continuous (earnings) or dichotomous (employment/unemployment), for the sake of simplicity we entered only age and age square, without imposing knot points.

⁶⁵ See Myers et al (2009) and the studies reviewed therein. In our dataset, the correlation between age at arrival and age is 0.26 (N= 9,236).

marriage. Our focus, however, is on the remaining variables, and therefore the issue of the endogeneity of family structure variables becomes less important. We consider family characteristics principally as control variables.

The first human capital variable is literacy, defined as the ability to read and write (dummy variable set to 1 for literate respondents). We assume that literacy is an appropriate indicator of the stock of human capital accumulated by individuals, in a country in which differences in regional literacy rates in the early twentieth century were still large.⁶⁶ Nevertheless, we also took into account the rural/urban nature of the migrant, as a supplementary indicator of the possession of human capital readily transferable to the urban labor market of Barcelona. Urban migrants were likely to have had fewer problems in integrating, if their skills were more similar than those of rural migrants to skills among natives.

A key variable in the analysis is the year of arrival for non-natives, which was entered into the regressions in the form of (four) dummy variables, for the principal migratory periods as defined by the literature cited above.⁶⁷ We also used the distribution of cases over time in the final dataset as a guide. This additional criterion revealed that, for example, in the second half of the 1920s there was a remarkable change in the geographical composition of the places of origin. The time of arrival variables indicate whether longer residence in Barcelona permitted migrants to acquire location-specific human capital and to move up the occupational ladder. These variables also capture the labor market conditions encountered upon arrival and the socio-economic conditions in the places of origin at the time of migration, which may affect the performance of migrants.

In the first regression, a dichotomous variable scores 1 if the individual is an in-migrant. In further regressions, to indicate the main source regions of migrants exactly, we will substitute a set of dummy variables for the yes/no variable. Place of birth variables reflect differences in the assimilation process related to specific regional characteristics not captured by socio-demographic, human capital and time variables. One important difference between migrants from the province of Barcelona and the remaining Catalan provinces, on the one hand, and migrants from Valencia, Aragon, Murcia and Almeria and the rest of Spain, on the

⁶⁶ Nuñez (2005).

⁶⁷ Dividing the year of arrival into four *periods* of arrival helps to avoid perfect collinearity between age (in 1930), age at arrival and year of arrival. In this regard, see Borjas (1999), pp. 1719-1720.

other, was the ability to speak Catalan.⁶⁸ Spanish and Catalan, as Romance languages, are in reality very similar. Aragonese migrants from areas close to Cataluña and Valencian migrants, moreover, spoke varieties of Catalan or understood it. Migrants from the rest of Spain lacked fluency in Catalan, a fact that not only may have limited access to certain occupations, but also may have acted as a “marker” of birthplace in situations of potential discrimination, as described by the literature cited above.

Finally, we included a variable to reflect the effect of migration networks on the occupational attainment of individuals. Migration networks are “sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through ties of kinship, friendship, and shared community origin”.⁶⁹ Such networks may accelerate the pace at which migrants converge with their native counterparts, by providing access to information, assistance and resources useful in the labor market. Migration networks, however, may also have adverse effects on the occupational attainment on migrants. Well-established networks reduce the costs of migration, a fact that may encourage less skilled or less resourceful individuals to migrate. Moreover, an increase in the concentration of migrants may raise competition for jobs, as well as reducing incentives to acquire location-specific skills, such as language, and to interact with natives. The net effect of migration networks on outcomes is, therefore, an empirical question.⁷⁰ We follow the usual procedure to determine the relevance of networks. For each individual, network extension is captured as the percentage of the total database population from the same province of origin. For the case of natives and immigrants from other countries, we follow the same strategy.

Empirical results

The results of the MNL models are given in Tables 5, 6 and 7. Regressions were estimated using Stata 11. A number of estimated coefficients are statistically significant at the

⁶⁸ Both Spanish and Catalan were spoken in Barcelona in 1930. The sociologist Joaquim Maluquer i Sostres (1965), p. 148, underlined the importance of the Catalan language in the migrant assimilation process.

⁶⁹ Massey et al (1998), p. 42. On the importance of migration networks in internal migrations, see Gurak and Caces (1992).

⁷⁰ Bauer et al (2009) review the positive and negative effects of migration networks on migrant performance. Mirri (1996) indicates the positive effects of networks for the case of early migrants from the rest of Catalonia, Valencia and Aragon. By contrast, Sentís (1932 [1994]) and Maluquer i Sostres (1965) suggest the existence of negative effects for migrants arriving in Barcelona at the end of the period under study.

usual levels, in spite of the complexity of this kind of model.⁷¹ Interpreting the coefficients is not straightforward, however, due to the nonlinearity of the model, as well as the many possible comparisons between, in this case, occupational categories. The results are presented in terms of marginal changes in the predicted probability of an occupational category. The value of the marginal effects depends on the level of the remaining variables included in the model. We ran the models with all variables held at their mean, the usual procedure. For each explanatory variable, the tables report the marginal impacts on the likelihood of belonging to each of the four occupational categories. In the case of the continuous variables (age variables, number of children, and the migrant stock), the value of the marginal impacts is computed when the variable increases by one unit. In the case of the dummy variables (all those remaining), the value of marginal impacts is computed when the variable changes from 0 to 1. Regressions are estimated using heteroskedasticity-robust standard errors. For each of the three models reported (Tables 5, 6 and 7), the Likelihood Ratio (LR) tests suggest that the hypothesis that the effects of all variables are simultaneously zero can be rejected.

In Table 5, we present the results for a “basic” model, comprising socio-demographic variables, literacy as a proxy for the accumulation of human capital, and a dichotomous variable reporting if the individual is an in-migrant.⁷² Before discussing the migrant variable, we need to consider the effect of other variables. Results for the age variables are reasonable. Each year of age reduces (increases) the probability of belonging to one of the two manual (non-manual) categories. These results suggest that experience increased the probability of belonging to a non-manual category. The returns to experience appear to decrease among older individuals. The effects are significant only for the *Unskilled*, *Manual* and *Low and Medium, Non-Manual* categories; these, however are the largest (see Notes to Table 2). With all variables at their mean, each year of age, for example, reduces by 1.2 percent the predicted probability of belonging to the *Unskilled*, *Manual* category.

As mentioned above, the interpretation of family variables is unclear, due to potential endogeneity. The effect of being single, for example, is striking, while the effect of having children is also inconsistent. We have decided not to focus on these effects.

When observing the effect of literacy on occupational attainment, strong and significant results emerge in three of the four categories. The predicted probability of belonging to the

⁷¹ See, for example, Cushing and Poot (2004).

⁷² A baseline model excluding the migrant variable was also set, to confirm the sign and extent of the impact of age and literacy. The models in Tables 5 and 6 were also estimated excluding immigrants from other countries. The results were essentially the same.

Unskilled, Manual category is 35.3 percent higher for an illiterate individual, whereas the skill premium is 27 percent and 6 percent higher in the non-manual categories. The relatively low impact of human capital in the *High, Non-Manual* category may indicate that other, non-captured, qualities, such as further education or a patrimony, are necessary to belong to this category.

The results for the age and literacy variables are in line with the descriptive statistics reported in Tables 3 and 4. These variables make a strong contribution to explaining differences in occupational attainment. However, an interesting result emerges from Table 5. Accounting for the effect of experience and human capital, the impact of the migrant variable is significant for three occupational categories. In the *Unskilled, Manual* category, the effect is notable. In comparison with natives, migrants are 9.2 percent more likely to be in this category. In the following two tables, we explore the migrant effect in detail by dividing the migrant dichotomous variable into a set of more specific attributes.⁷³

[Table 5]

It may be the case that the migrant/native variable encompasses different effects, with either positive or negative signs, on the probability of belonging to each occupational attainment category. According to the hypotheses established above, other more specific variables may contribute to the distribution of migrants across occupations. Table 6 shows, firstly, that the impact of age and literacy variables remains similar. Regarding time variables, the results suggest, firstly, that age at arrival has no consistent effect on occupational attainment. Some of the coefficients estimated are significant, but the signs are not easy to interpret in general terms. There is no clear relationship between arrival at an early age and the achievement of a better occupation.⁷⁴

The impact of period of arrival is clear. In comparison with natives (the reference group), migrants are more likely to be in the *Unskilled, Manual* category. By contrast, migrants tend to display significant and lower probabilities of belonging to the remaining categories, with the partial exception of the *High, Non-Manual* category. One further result is that the cohorts of migrants who arrived after 1900 display very similar probabilities of

⁷³ This strategy follows Barrett and Duffy (2008).

⁷⁴ The inclusion of the age at arrival variables, in any case, reduces the impact of other variables, such as those corresponding to time of arrival. This was confirmed by regressions (not reported here) in which age at arrival variables were excluded.

belonging to each category, since estimated coefficients do not appear to decline steadily. In other words, despite the economic upswing in the city of Barcelona from the turn of the century onwards, the pattern of coefficients does not suggest that an improved economic assimilation occurred over time.

We also considered the place of origin composition. To overcome collinearity constraints, we constructed a new reference for the place of birth dummies. This new base comprises individuals born in the city of Barcelona *plus* individuals born in the rest of the Barcelona province, namely the migrant group likely to be most similar to natives. To clarify further, the time of arrival dummies are interpreted relative to individuals born in the city of Barcelona, whereas the place of birth dummies are interpreted relative to individuals born in the entire province of Barcelona. This methodological procedure may underestimate the impact of migrant status, if migrants from the rest of the province of Barcelona do in fact differ in some important way from individuals born in the capital. The place of birth effects should be interpreted with this potential limitation in mind.

The estimated coefficients of the place of origin variables appear to be very high. In comparison with people born in the province of Barcelona, all groups of Spanish migrants are more likely to be in the lowest occupational category and less likely to belong to the remaining categories. However, various differences among groups emerge. Taking the rest of the variables into account, migrants from the remaining Catalan provinces and the Balearic Islands were those least penalized. The penalty was also relatively low for migrants from the rest of Spain, a heterogeneous group of individuals (in which those born in the capital city of Madrid predominated). In contrast, the labor market performance of migrants from the remaining main places of origin, Valencia, Aragon, and Murcia and Almeria, was much worse. Migrants from these three regions, for example, were approximately 30 percent more likely to be in the *Unskilled, Manual* category. The results for international immigrants, a highly skilled group (see Table 4), suggest that their pattern of integration into the labor market of Barcelona tended to follow a different path to that of Spanish migrants.

The final effect analyzed in Table 6 is that of migration networks. According to the sign of estimated coefficients, the presence of early migrants did not facilitate the economic success of subsequent migrants from the same place (in this case, province) of origin. Migration networks apparently facilitated access to unskilled jobs, but did not open doors to other occupations. This finding resembles the results found for the other main destination for Spanish migrants in those years, Buenos Aires. As José Moya points out, emigrants from Spanish provinces with low emigration rates tended to perform better in occupational terms

than the average migrant.⁷⁵ The author argues that migration networks incentivized the negative selection of further migrants, as well as producing competition among workers from the same, or similar, places of origin.

[Table 6]

In Table 7, we report the results from a slightly different regression model in which we consider the rural/urban nature of migrants. In reality, place of birth dummies may reflect different processes of labor market integration for urban and rural migrants. We include dummy variables for urban and rural migrants, which are interpreted relative to natives. We consider the effect of these variables in a separate regression, due to constraints of collinearity similar to those mentioned above. We could have included the rural/urban variables in Table 6, but this would have required us to create a new, third, reference for dummy variables (for example, by adding individuals from the remaining Catalan provinces and the Balearic Islands) and, consequently, to lose too much information. Table 7 is intended to assess the impact of place of birth variables by taking into account the rural/urban nature of migrants. We remove the time of arrival dummies, whose estimated coefficients placed in doubt any improvement in the process of economic assimilation from 1900 onwards. International immigrants, whose rural/urban origin is not available, are not included in the new regression.

With these limitations in mind, the new results show, firstly, that urban migrants tended to integrate somewhat better than rural migrants, although the estimated coefficients are not always significant at the usual levels. More importantly, the effects of place of birth variables tend to strengthen when the rural/urban nature of migrants is controlled for.

[Table 7]

The results in Tables 5, 6 and 7 suggest that differences in the labor market performance of natives and migrants in the city of Barcelona cannot be attributed solely to differences in the level and type of skills, proxied by literacy and the rural/urban nature, and experience, proxied by age.

⁷⁵ Moya (1998), pp. 228-232. There were 306,850 Spaniards in Buenos Aires in 1914, 19.5 percent of the total population.

Neither are the findings consistent with a process of improved economic assimilation. In order to analyze in detail this possibility, we examined each main group of migrants separately. In regressions (not reported here), including the remaining control variables, we compared each group of migrants with natives. The estimated coefficients for time of arrival variables confirm the lack of a coherent pattern of improvement in occupational attainment over time. It appears that the distribution of natives and migrants across occupational categories was well established at the turn of the century, at a point in time in which the economy of Barcelona had not yet flourished and the stock of migrants was still relatively modest. During the first three decades of the twentieth century, Barcelona displayed great absorptive capacity but, however, few opportunities for the advancement of non-natives, even those arriving young. The development of migration networks, which connected early and later migrants, may have reinforced this pattern.

The empirical analyses also show that, with the exception of international immigrants, the occupational attainment of migrants was strongly influenced by their place of origin. Migrants from the rest of Catalonia and the Balearic Islands did better, while those from the other three main regions of origin (Valencia, Aragon, and Murcia and Almeria) were more likely to belong to the manual categories and less likely to be in the non-manual categories. The differences between these three regions are not large, which may indicate that contemporary representations of migrants from Murcia and Almeria as notoriously unskilled and difficult to assimilate were probably exaggerated. In this regard, possible differences among migrants from Valencia, Aragon, and Murcia and Almeria, such as the level of fluency in the Catalan language, appeared to be relatively unimportant.

Previous historical studies of the economic assimilation of migrants in Britain have proposed different conclusions. With the exception of the Irish, migrants did not exhibit lower earnings than natives in British cities in 1851. For purposes of comparison, London in 1930 is the most similar case to that of the present study. Timothy J. Hatton and Roy E. Bailey found that, relative to natives, migrants achieved similar or higher earnings and were less affected by unemployment. Much of this advantage is explained by the positive selection of migrants.⁷⁶

Our findings for Barcelona differ from previous evidence in several important aspects. Firstly, compared with natives, a considerable proportion of Spanish internal migrants possessed average skill levels which were lower and, probably, not fully transferable to the

⁷⁶ Hatton and Bailey (2002). For British cities in 1851, see Williamson (1990).

urban labor market. However, differences in human capital may not have been the only explanation of the relatively poor performance of migrants. The differences in occupational attainment between natives and migrants remain even when demographic and human capital characteristics are taken into account in regression models. The strong and significant effect of place of birth indicators suggests the existence of specific regional characteristics, unobservable traits, or a lack of key resources, none of which are captured by our remaining variables.

On the basis of the attitudes to migration described by other sources, neither do we reject discrimination as one of the reasons explaining the under-achievement of, at least some, groups of migrants. In this regard, labor market competition may also produce a certain degree of opposition to non-natives. Although the lack of appropriate data leads to tentative evaluations, it has been suggested that in-migration throughout the 1920s affected wages in (the province of) Barcelona. Estimates suggest that average wages in Barcelona would have been up to nine percent higher than their actual levels if no migration had occurred.⁷⁷

Beggary, delinquency and labor market competition were the “visible consequences” of migration which produced unease in the host society, according to the most celebrated contemporary analysis of migration in Barcelona and Catalonia. Vandellós i Solà also detected fear of migrants, or their descendants, moving up the occupational ladder.⁷⁸ Period of time variables in our regressions, however, suggest that the labor market integration of migrants followed a well-worn path which resulted in their being strongly concentrated in certain occupations.

Conclusions

This article has explored the capacity of a main labor market to incorporate migrants, mostly internal migrants, in the past. As a growing industrial and services city since the mid-nineteenth century, Barcelona in 1930 had attracted almost 600,000 migrants. The study of the city contributes to an international literature in which there are still very few empirical analyses. Two previous studies have shown that urban labor markets in Britain absorbed migrants with ease.

⁷⁷ Silvestre (2005), pp. 252-256. These estimates are in line with those found in other migration studies. See Boyer (1997), Hatton and Williamson (2005), pp. 124-125, and the works cited therein.

⁷⁸ Vandellós i Solà (1935a), pp. 18 and 165.

This article has utilized a rich micro database which, among other variables of interest, provides information on occupations. In comparison with previous historical studies of migration to cities, a significant innovation is that the source provides the year of arrival in the place of destination, a key variable for understanding the integration process. It is argued that the potential shortcomings of the source, which as in other studies of the labor market integration of migrants is a cross-section dataset, do not seriously affect the most important conclusions.

The main issues in the present article are the occupational distribution of migrants and its evolution. The study assesses the importance of several determinants, following previous theoretical and empirical specifications. The results diverge from previous evidence in various ways.

The results suggest that, in comparison with natives, the occupational outcome of migrants is partly explained by their lower experience in the labor market, their lower accumulation of human capital, and the lack of correspondence between their skills and the requirements of an urban destination. However, other factors appear to play an important role as well. The occupational attainment of migrants is determined by their place of birth, an indicator of specific regional attributes and/or unobserved characteristics. In accordance with contemporary discourses and later historiography, it is also argued that some groups of migrants may have faced discrimination to some degree.

The study also shows that a clear process of convergence in the labor market situation of migrants and similar natives does not appear to exist. From the turn of the century onwards, migrants were not more likely to change occupational category, despite longer periods of residence, arriving at a younger age and using migration networks. To a certain extent, therefore, the capacity of Barcelona to assimilate Spaniards from poorer parts of the country was somewhat limited. This suggests the existence of barriers to occupational mobility for a significant part of the city's population.

References

- Alba, Richard, and Victor Nee (1997): "Rethinking Assimilation Theory for a New Era of Immigration" *International Migration Review* 31, 4: 826-874.
- Ameniya, Takeshi (1981): "Qualitative response models: a survey" *Journal of Economic Literature* 19, 4: 1483-1536.
- Aracil, Rafael, Llorenç Ferrer, Joaquín Recaño, and Antoni Segura (1996): "La inmigración en la Cataluña rural (1860-1940): estructura demográfica y componentes espaciales" In Manuel González Portilla and Carmele Zarraga (eds.) *Los movimientos migratorios en la construcción de las sociedades modernas*. Bilbao: Universidad del País Vasco, pp. 281-314.
- Arango, Joaquín (1976): "Cambio económico y movimientos migratorios en la España oriental del primer tercio del siglo XX: algunas hipótesis sobre determinantes y consecuencias" *Hacienda Pública Española* 38: 51-80.
- Bardet, Jean-Pierre, and Jacques Dupâquier (1999): *Histoire des populations de l'Europe. Volume 3, Les temps incertains, 1914-1998*. Paris: Fayard.
- Barrett, Alan, and David Duffy (2008): "Are Ireland's Immigrants Integrating into Its Labor Market?" *International Migration Review* 42, 3: 597-619.
- Bauer, Thomas, Gil S. Epstein, and Ira N. Gang (2009): "Measuring ethnic linkages among migrants" *International Journal of Manpower* 30, 1/2: 56-69.
- Borderías, Cristina (2002): "Women workers in the Barcelona labor market, 1856-1936" In Angel Smith (ed.) *Red Barcelona. Social Protest and Labor Mobilization in the Twentieth Century*. London: Routledge, pp. 142-166.
- Borjas, George J. (1985): "Assimilation, Changes in Cohort Quality, and the Earnings of Immigrants" *Journal of Labor Economics* 3, 4: 463-489.
- Borjas, George J. (1999): "The Economic Analysis of Immigration" In Orley Ashenfelter and David Card (eds.) *Handbook of Labor Economics. Vol. 3*. Amsterdam: Elsevier Science, pp. 1697-1760.
- Boyer, George R. (1997): "Labor migration in southern and eastern England, 1860-1901" *European Review of Economic History* 1, 1: 191-215.
- Calvo, Angel (1995): "Activitats econòmiques" In Jaume Sobrequès i Callicó (ed.) *Història de Barcelona*. Volume 7. Barcelona: Enciclopèdia Catalana, pp. 171-209.
- Camps, Enriqueta (1995): *La formación del mercado de trabajo industrial en la Cataluña del siglo XIX*. Madrid: Ministerio de Trabajo y Seguridad Social.

- Catalan, Jordi (1997): “Els recursos humans en el desenvolupament industrial de Barcelona, 1714-1975” In Joan Roca i Albert (ed.) *La formació del cinturó industrial de Barcelona*. Barcelona: Proa, pp. 213-247.
- Chiswick, Barry R. (1978): “The Effect of Americanization on the Earnings of Foreign-born Men” *Journal of Political Economy* 86: 897-921.
- Chiswick, Barry R., Yew Liang Lee, and Paul W. Miller (2005): “A Longitudinal Analysis of Immigrant Occupational Mobility: A Test of the Immigrant Assimilation Hypothesis” *International Migration Review* 39, 2: 332-353.
- Chiswick, Barry R., and Paul W. Miller (2007): “Earnings and Occupational Attainment: Immigrants and the Native Born” IZA (The Institute for the Study of Labor) Discussion Paper No. 2676.
- Cushing, Brian, and Jacques Poot (2004): “Crossing boundaries and borders: Regional science advances in migration modelling” *Papers in Regional Science* 83, 1: 317-338.
- Dirección General de Estadística (1922): *Censo de la población española, 1920*. Madrid: Talleres del Instituto Geográfico y Catastral.
- Dirección General del Instituto Geográfico Catastral y Estadístico (1932): *Censo de la población de España, 1930*. Madrid: Talleres del Instituto Geográfico y Catastral.
- Dirección General del Instituto Geográfico y Estadístico (1883): *Censo de la población de España, 1877*. Madrid: Imprenta de la Dirección General del Instituto Geográfico y Estadístico.
- Dirección General del Instituto Geográfico y Estadístico (1891): *Censo de la población de España, 1887*. Madrid: Imprenta de la Dirección General del Instituto Geográfico y Estadístico.
- Dirección General del Instituto Geográfico y Estadístico (1902): *Censo de la población de España, 1900*. Madrid: Imprenta de la Dirección General del Instituto Geográfico y Estadístico.
- Dirección General del Instituto Geográfico y Estadístico (1913): *Censo de la población de España, 1910*. Madrid: Talleres de la Dirección General del Instituto Geográfico y Estadístico.
- Doménech, Jordi, and Alexander Elu-Terán (2008): “Women’s paid work in an urban developing economy. Barcelona in 1930” *Revista de Historia Económica/Journal of Iberian and Latin American Economic History* 26, 3: 375-402.
- Ealham, Chris (2010): *Class, Culture and Conflict in Barcelona, 1898-1937* (Second Edition). London: Routledge.

- Foreman-Peck, James (1992): "A Political Economy of International Migration, 1815-1914" *The Manchester School* 60, 4: 359-376.
- García Barbanchó, Alfonso G. (1967): *Las migraciones interiores españolas. Estudio cuantitativo desde 1900*. Madrid: Instituto de Desarrollo Económico.
- Green, David A. (1999): "Immigrant Occupational Attainment: Assimilation and Mobility over Time" *Journal of Labor Economics* 17, 1: 49-79.
- Goldin, Claudia (1994): "The Political Economy of Immigration Restriction in the United States, 1890 to 1921" In Claudia Goldin and Gary D. Libecap (eds.) *The Regulated Economy. A Historical Approach to Political Economy*. Chicago: The University of Chicago Press, pp. 223-257.
- Gurak, Douglas T., and Fe Caces (1992): "Migration Networks and the Shaping of Migration Systems" In Mary M. Kritz, Lin Lean Lim, and Hania Zlotnik (eds.) *International Migration Systems: A Global Approach*. Oxford: Clarendon, pp. 150-176.
- Hatton, Timothy J. (2010): "The Cliometrics of International Migration: A Survey" *Journal of Economic Surveys* 24, 5: 941-969.
- Hatton, Timothy J., and Roy E. Bailey (2002): "Natives and migrants in the London labor market, 1929-1931" *Journal of Population Economics* 15, 1: 59-81.
- Hatton, Timothy J., and Jeffrey G. Williamson (2005): *The Age of Mass Migration. Causes and Economic Impact*. Oxford: Oxford University Press.
- Herranz, Alfonso (2005): "La reducción de los costes de transporte en España (1800-1936)" *Cuadernos Económicos del ICE* 70: 183-203.
- Higham, John ([1955] 1992): *Strangers in the Land. Patterns of American Nativism, 1860-1925*. New Brunswick, NJ: Rutgers University Press.
- Hohenberg, Paul M., and Lynn Hollen Lees (1985): *The Making of Urban Europe, 1000-1950*. Cambridge, MA: Harvard University Press.
- Kaplan, Temma (1992): *Red City, Blue Period. Social Movements in Picasso's Barcelona*. Berkeley: University of California Press.
- Leonard, Thomas. C. (2005): "Eugenics and Economics in the Progressive Era" *Journal of Economic Perspectives* 19, 4: 207-224.
- Llonch, Montserrat (1996): "Los canales migratorios en la Catalunya del primer tercio del siglo XX. Algunas hipótesis de trabajo" In Manuel González Portilla and Karmele Zarraga (eds.) *Los movimientos migratorios en la construcción de las sociedades modernas*. Bilbao: Universidad del País Vasco, pp. 337-346.

- Long, Jason (2005): "Rural-Urban Migration and Socioeconomic Mobility in Victorian Britain" *The Journal of Economic History* 65, 1: 1-35.
- Lucassen, Leo (2005): *The Immigrant Threat. The Integration of Old and New Migrants in Western Europe since 1850*. Urbana and Chicago: University of Illinois Press.
- Maluquer i Sostres, Joaquim (1965): *Població i societat a l'àrea catalana*. Barcelona: Editorial A.C.
- Martínez-Soto, Angel P., Miguel A. Pérez de Perceval, and Domingo Navarro (2005): "El Beal: análisis de un núcleo minero de la Sierra de Cartagena (1870-1940)" *Revista de Demografía Histórica* 23, 1: 139-175.
- Mass, Ineke, and Marco H.D. Leeuwen (2005): "Total and Relative Endogamy by Social Origin: A First International Comparison of Changes in Marriage Choices during the Nineteenth Century" *International Review of Social History* 50, Supplement: 275-295.
- Massey, Douglas S., Joaquín Arango, Graeme Hugo, Ali Kouaouchi, Adela Pelegrino, and J. Edward Taylor (1998): *Worlds in Motion. Understanding International Migration at the End of the Millennium*. Oxford: Oxford University Press.
- McFadden, Daniel L. (1973): "Conditional Logit Analysis of Qualitative Choice Behavior" In Paul Zarembka (ed.) *Frontiers in Econometrics*. New York: Academic Press, pp. 105-142.
- Minns, Chris (2000): "Income, Cohort Effects, and Occupational Mobility: A New Look at Immigration to the United States at the Turn of the 20th Century" *Explorations in Economic History* 37, 4: 326-350.
- Mirri, Teresa (1996): "Migrantes en las jóvenes sociedades industriales: integración y diferenciación social" *Historia Social* 26: 79-96.
- Mitchell, Brian R. (1992): *International Historical Statistics. Europe, 1750-1988* (Third Edition). New York: Stockton Press.
- Moch, Leslie Page (1995): "Moving Europeans: Historical migration practices in Western Europe" In Robin Cohen (ed.) *The Cambridge Survey of World Migration*. Cambridge: Cambridge University Press, pp. 126-130.
- Moya, José C. (1998): *Cousins and Strangers. Spanish Immigrants in Buenos Aires, 1850-1930*. Berkeley: University of California Press.
- Myers, Dowell, Xin Gao, and Amon Emeka (2009): "The Gradient of Immigrant Age-at-Arrival Effects on Socioeconomic Outcomes in the U.S." *International Migration Review* 43, 1: 205-227.

- Núñez, Clara E. (2005): “Educación” In Albert Carreras and Xavier Tafunell (eds.) *Estadísticas históricas de España. Siglos XIX y XX. Volumen I*. Madrid: Fundación BBVA, pp. 155-244.
- Oyón, José Luis (2008): *La quiebra de la ciudad popular. Espacio urbano, inmigración y anarquismo en la Barcelona de entreguerras, 1914-1936*. Barcelona: Edicions del Serbal.
- Oyón, José Luis, José Maldonado, and Eulàlia Grifol (2001): *Barcelona 1930: un atlas social*. Barcelona: Edicions UPC.
- Pascual, Jordi (1985): “Un economista català: Josep Antoni Vandellós i Solà (1899-1950)” Epilogue to Josep A. Vandellós i Solà, Josep *Catalunya, poble decadent*. Barcelona: Edicions 62, pp. 147-215.
- Pélissier, Jean-Pierre, Danièle Rébaudo, Marco H.D. van Leeuwen, and Ineke Maas (2005) “Migration and Endogamy According to Social Class: France, 1803–1986” *International Review of Social History* 50, Supplement: 219-246.
- Pinilla, Vicente, and María I. Ayuda (2009): “Foreign markets, globalisation and agricultural change in Spain” In Vicente Pinilla (ed.) *Markets and Agricultural Change in Europe from the 13th to the 20th century*. Turnhout: Brepols Publishers, pp. 173-208.
- Pons, Jordi, Elisenda Paluzie, Javier Silvestre, and Daniel A. Tirado (2007): “Testing the New Economic Geography: Migrations and Industrial Agglomerations in Spain” *Journal of Regional Science* 47, 2: 289-313.
- Reher, David S. (1989): “Urban growth and population development in Spain, 1787-1930” In Richard Lawton and Robert Lee (eds.) *Urban Population Development in Western Europe from the Late Eighteenth to the Early Twentieth Century*. Liverpool: Liverpool University Press, pp. 190-219.
- Reher, David S. (1994): “Ciudades, procesos de urbanización y sistemas urbanos en la Península Ibérica, 1500-1991” In Manuel Guàrdia, Francisco J. Monclús and José L. Oyón (eds.) *Atlas histórico de ciudades europeas*. Barcelona: Salvat, pp. 1-29.
- Rosés, Joan, and Blanca Sánchez-Alonso (2004): “Regional wage convergence in Spain, 1850-1930” *Explorations in Economic History* 41, 4: 404-425.
- Sánchez, Àlex (2007): *Barcelona, ciutat i treball*. Barcelona: Ajuntament de Barcelona.
- Sánchez Picón, Andrés (1992): *La integración de la economía almeriense en el mercado mundial (1778-1936)*. Almería: Instituto de Estudios Almerienses.
- Sentís, Carles ([1932] 1994): *Viatge en Transmiserià. Crònica viscuda de la primera gran emigración a Catalunya*. Barcelona: Edicions La campana.

- Silvestre, Javier (2005): "Internal Migrations in Spain, 1877-1930" *European Review of Economic History* 9, 2: 233-265.
- Silvestre, Javier (2007): "Temporary Internal Migrations in Spain, 1860-1930" *Social Science History* 31, 4: 539-574.
- Simpson, James (1995): "Real wages and labor mobility in Spain, 1860-1936" In Peter Scholliers and Vera Zamagni (eds.) *Labour's Reward: Real Wages and Economic Change in Nineteenth and Twentieth Century Europe*. London: Edward Elgar, pp. 182-199.
- Smith, Angel (2002): "The rise of labor, 1898-1918" In Angel Smith (ed.) *Red Barcelona. Social Protest and Labor Mobilization in the Twentieth Century*. London: Routledge, pp. 17-43.
- Soto, Álvaro (1989): *El trabajo industrial en la España contemporánea (1874-1936)*. Barcelona: Anthropos.
- Sudrià, Carles (1992): "La modernidad de la capital industrial de España" In Alejandro Sánchez (ed.) *Barcelona, 1888-1929. Modernidad, ambición y conflictos de una ciudad soñada*. Madrid: Alianza Editorial, pp. 44-56.
- Tafunell, Xavier (2005): "Urbanización y vivienda" In Albert Carreras and Xavier Tafunell (eds.) *Estadísticas históricas de España. Siglos XIX y XX. Volumen I*. Madrid: Fundación BBVA, pp. 455-499.
- Tatjer, Mercè (1980): "La inmigración en Barcelona en 1930: los andaluces en la Barceloneta" *Estudios Geográficos* 159: 119-143.
- Tatjer, Mercè (1995): "Evolució demogràfica" In Jaume Sobrequès i Callicó (ed.) *Història de Barcelona*. Volume 7. Barcelona: Enciclopèdia Catalana, pp. 71-122.
- Termes, Josep (1983): "La immigració a Catalunya: política i cultura" In Pierre Vilar (ed.) *Reflexions crítiques sobre la cultura catalana*. Barcelona: Generalitat de Catalunya, pp. 199-293.
- Treves, Anna (1976): *Le migrazioni interne nell' Italia fascista. Politica e realtà demografica*. Turin: Einaudi.
- Valdour, Jacques (1919): *L'Ouvrier espagnol. Observations vécues. Tome 1-Catalogue*. Paris: René Giard and Arthur Rousseau, Éditeurs.
- Vandellós i Solà, Josep A. (1935a): *La immigració a Catalunya*, Barcelona: Institució Patxot.
- Vandellós i Solà, Josep A. ([1935b] 1985): *Catalunya, poble decadent*. Barcelona: Edicions 62.

- Vidal, Tomàs (1979): “Èxode rural i problemàtica demospacial a Catalunya (1860-1970)” *Estudis d’Història Agrària* 2: 193-207.
- Vidal, Tomàs (1988): “La demografía baleárica contemporánea (etapa estadística: 1857-1981)” In Vicente Pérez Moreda and David S. Reher (eds.) *Demografía histórica en España*. Madrid: Ediciones el arquero, pp. 220-227.
- Vilà, Joan (1958-9): “La aportación murciana al crecimiento poblacional de Barcelona”, *Anales de la Universidad de Murcia. Facultad de Letras* 17, 3-4: 89-103.
- Williamson, Jeffrey G. (1990): “Migrant Earnings in Britain’s Cities in 1851: Testing Competing Views of Urban Labor Market Absorption” *The Journal of European Economic History* 19, 1: 163-190.
- Wooldridge, Jeffrey. M. (2002): *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: The MIT Press.

Tables and Map

Table 1
DECOMPOSITION OF POPULATION GROWTH IN THE CITY OF BARCELONA

	Annual Rates of Growth x 1,000		
	Population Growth	Natural Increase	Net Migration
Inter-Census Period			
1901-1910	9.7	0.7	9.0
1911-1920	18.9	-2.8	21.7
1921-1930	34.4	5.1	29.3
Total, 1901-1930	63.1	3.0	60.1

Notes: Calculations are based on data taken from the population censuses (Population Growth) and the statistical yearbooks (Natural Increase).

Sources: Dirección General del Instituto Geográfico y Estadístico (1902); Dirección General del Instituto Geográfico y Estadístico (1913); Dirección General de Estadística (1922); Dirección General del Instituto Geográfico Catastral y Estadístico (1932). Reclassifications of statistical yearbooks data by García Barbancho (1967).



Table 2
OCCUPATIONAL CATEGORIES

Our Categories	HISCLASS Groups [Code]	Main Occupations in the Sample, and Percent of Our Categories
I- Unskilled, Manual	Unskilled Workers [11] Unskilled Farm Workers [12]	Laborer [<i>Jornalero</i>] (95.1)
II- Low- and Medium Skills, Manual	Foremen [6] Medium-Skills Workers [7] Farmers and Fishermen [8] Lower-Skilled Workers [9] Lower-Skilled Farm Workers [10]	Mechanic [<i>Mecánico</i>] (6.4) Shoemaker [<i>Zapatero</i>] (6.2) Tailor [<i>Sastre</i>] (4.8) Baker [<i>Panadero</i>] (3.4) Carpenter [<i>Carpintero</i>] (8.1) Bricklayer [<i>Albañil</i>] (7.8) Painter [<i>Pintor</i>] (5.0) Sailor [<i>Marino</i>] (4.5)
III- Low- and Medium Skills, Non-Manual	Non-Manual Lower Managers [3] Non-Manual Lower Professionals, Clerical and Sales Personal [4] Non-Manual Lower Clerical and Sales Personal [5]	Driver [<i>Chofer</i>] (2.8) Salesmen [<i>Comercio</i>] (32.9) Assistants [<i>Empleado</i>] (18.7) Janitor [<i>Portero</i>] (18.8) Salesclerk [<i>Dependiente</i>] (6.6)
IV- High Skills, Non-Manual	Non-Manual Higher Managers [1] Non-Manual Higher Professionals [2]	Manufacturer [<i>Industrial</i>] (42.7) Owner [<i>Propietario</i>] (11.5) Physician [<i>Médico</i>] (12.4) Lawyer [<i>Abogado</i>] (6.5)

Notes: The number of observations for our categories I, II, III and IV is 4,830, 1,147, 2,624 and 635, respectively.

Table 3
OCCUPATIONAL ATTAINMENT FOR MALE WORKERS IN THE CITY OF BARCELONA IN 1930

	Natives			Migrants				
		Rest of Barcelona	Rest of Catalonia, and B.I.	Valencia	Aragon	Murcia and Almeria	Rest of Spain	Other Countries
Skills (Percent)								
Unskilled, Manual	45.3	41.3	46.5	69.0	67.9	77.2	52.7	22.2
Low/Medium, Manual	12.8	14.9	14.4	13.4	9.8	8.7	9.7	10.3
Low/Medium, Non-Manual	32.4	33.9	30.8	14.8	20.6	13.2	33.0	51.3
High, Non-Manual	9.4	9.8	8.3	2.7	1.7	0.9	4.6	16.1

Notes: B.I.: Balearic Islands. Number of observations = 9,236.

Source: The 1930 *Padrón Municipal de Habitantes* of Barcelona.

Table 4
SELECTED CHARACTERISTICS OF MALE WORKERS IN THE CITY OF BARCELONA IN 1930

	Natives		In-Migrants					
		Rest of Barcelona	Rest of Catalonia, and B.I.	Valencia	Aragon	Murcia and Almeria	Rest of Spain	Other Countries
Average Age (Years)	42.1	47.4	46.6	44.0	43.9	41.4	43.5	44.7
Literacy (Percent)	94.4	94.5	92.2	81.8	89.5	77.6	94.2	98.1
Year of Arrival (Percent)								
Before 1900		34.1	27.7	17.7	18.6	3.3	10.9	18.0
1900-1913		28.9	32.9	37.2	27.5	28.3	25.8	26.4
1914-1924		23.3	26.6	31.6	37.2	50.6	37.0	31.8
1925-1930		13.7	12.8	13.5	16.6	17.8	26.2	23.8
Rural origin (Percent)		74.4	73.6	71.4	84.6	30.4	57.6	-
Stock (Percent of Sample)	31.0	10.6	17.6	11.7	8.8	7.5	9.9	2.8

Notes: B.I.: Balearic Islands. Rural origin refers to villages of less than 10,000 inhabitants. Number of observations = 9,236.
Source: The 1930 *Padrón Municipal de Habitantes* of Barcelona. See the text for definition of variables.

Table 5
MULTINOMIAL LOGISTIC MODEL OF OCCUPATIONAL ATTAINMENT FOR MALE WORKERS
IN THE CITY OF BARCELONA IN 1930. BASIC MODEL.

	Unskilled, Manual		Low- and Medium, Manual		Low- and Medium, Non-Manual		High, Non-Manual	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
Age	-0.012***	0.003	-0.000	0.002	0.010***	0.003	0.002	0.001
Age ²	0.000**	0.000	0.000	0.000	-0.000***	0.000	-0.000	0.000
(Married)								
Single	-0.206***	0.027	-0.004	0.020	0.126***	0.027	0.084***	0.019
Widower	-0.008	0.027	-0.001	0.018	0.013	0.024	-0.004	0.010
Children < 16	0.003	0.005	0.010***	0.003	-0.017***	0.004	0.004**	0.002
Literate	-0.353***	0.014	0.017	0.011	0.273***	0.008	0.063***	0.004
Migrant	0.092***	0.012	-0.008	0.008	-0.050***	0.010	-0.033***	0.006
Log Pseudolikelihood: -10,095.252								
LR Chi ² (21): 861.125								
Prob > Chi ² : 0.000								
N: 9,236								

*** indicates statistical significance at 1 percent level.

** indicates statistical significance at 5 percent level.

* indicates statistical significance at 10 percent level.

Notes: The regression includes an intercept term, and is estimated using heteroskedasticity-robust standard errors. Reference categories are in parentheses.

Table 6
MULTINOMIAL LOGISTIC MODEL OF OCCUPATIONAL ATTAINMENT FOR MALE WORKERS
IN THE CITY OF BARCELONA IN 1930. EXTENDED MODEL I.

	Unskilled, Manual		Medium, Manual		Low- and Medium, Non-Manual		High, Non-Manual	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
Age	-0.010***	0.003	-0.000	0.002	0.009***	0.003	0.002	0.001
Age ²	0.000	0.000	0.000	0.000	-0.000**	0.000	-0.000	0.000
(Married)								
Single	-0.193***	0.029	-0.005	0.020	0.127***	0.027	0.071***	0.018
Widower	-0.006	0.027	-0.003	0.018	0.014	0.024	-0.005	0.009
Children < 16	-0.005	0.005	0.012***	0.003	-0.012***	0.004	0.006***	0.002
Literate	-0.329***	0.015	0.011	0.012	0.264***	0.009	0.054***	0.004
Age at Arrival	-0.001	0.002	-0.000	0.001	0.003**	0.002	-0.001**	0.001
Age at Arrival ²	0.000**	0.000	-0.000	0.000	-0.000***	0.000	0.000	0.000
(Born in Barcelona City)								
Before 1900	0.174**	0.092	-0.053	0.051	-0.099	0.074	-0.022	0.027
1900-1913	0.270***	0.084	-0.081*	0.048	-0.153**	0.068	-0.036	0.025
1914-1924	0.263***	0.082	-0.078*	0.046	-0.149**	0.066	-0.037	0.023
1925-1930	0.272***	0.073	-0.080**	0.040	-0.156***	0.058	-0.037**	0.018
(Born in Barcelona, City + Rest of Province)								
Rest of Cat. + B.I.	0.128***	0.032	-0.042**	0.019	-0.063**	0.027	-0.023**	0.009
Valencia	0.304***	0.029	-0.066***	0.018	-0.189***	0.022	-0.050***	0.006
Aragon	0.316***	0.030	-0.094***	0.015	-0.167***	0.025	-0.056***	0.005
Murcia, Almeria	0.341***	0.024	-0.093***	0.013	-0.193***	0.019	-0.055***	0.004
Rest of Spain	0.252***	0.046	-0.101***	0.018	-0.105**	0.041	-0.046***	0.008
Other Countries	-0.034	0.072	-0.067**	0.026	0.095	0.068	0.004	0.025
Mig. Networks	0.018***	0.005	-0.007**	0.003	-0.007	0.005	-0.003*	0.002
Log Pseudolikelihood: -9,824.455								
LR Chi ² (57): 1,402.720								
Prob > Chi ² : 0.000								
N: 9,236								

*** indicates statistical significance at 1 percent level.

** indicates statistical significance at 5 percent level.

* indicates statistical significance at 10 percent level.

Notes: Rest of Cat. + B.I. = Rest of Catalonia + Balearic Islands. The regression includes an intercept term, and is estimated using heteroskedasticity-robust standard errors. Reference categories are in parentheses.

Table 7
MULTINOMIAL LOGISTIC MODEL OF OCCUPATIONAL ATTAINMENT FOR MALE WORKERS
IN THE CITY OF BARCELONA IN 1930. EXTENDED MODEL II.

	Unskilled, Manual		Low- and Medium, Manual		Low- and Medium, Non-Manual		High, Non-Manual	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
Age	-0.009***	0.003	-0.000	0.002	0.008***	0.003	0.002	0.001
Age ²	0.000	0.000	0.000	0.000	-0.000**	0.000	-0.000	0.000
(Married)								
Single	-0.194***	0.030	-0.001	0.021	0.122***	0.028	0.073***	0.018
Widower	-0.008	0.028	-0.005	0.018	0.016	0.024	-0.003	0.009
Children < 16	-0.006	0.005	0.012***	0.003	-0.012***	0.004	0.006***	0.002
Literate	-0.321***	0.015	0.011	0.012	0.259***	0.009	0.051***	0.004
Age at Arrival	-0.002	0.002	-0.000	0.001	0.004**	0.001	-0.001	0.001
Age at Arrival ²	0.000*	0.000	-0.000	0.000	-0.000**	0.000	0.000	0.000
(Born in Barcelona City)								
Rural Origin	0.326***	0.090	-0.099	0.062	-0.184**	0.079	-0.043	0.032
Urban Origin	0.251***	0.083	-0.080*	0.047	-0.142**	0.066	-0.029	0.024
(Born in Barcelona, City + Rest of Province)								
Rest of Cat. + B.I.	0.135***	0.032	-0.045**	0.019	-0.068**	0.026	-0.021**	0.009
Valencia	0.310***	0.029	-0.071***	0.018	-0.191***	0.021	-0.048***	0.006
Aragon	0.315***	0.030	-0.096***	0.015	-0.166***	0.025	-0.053***	0.005
Murcia, Almeria	0.358***	0.022	-0.101***	0.012	-0.203***	0.018	-0.054***	0.004
Rest of Spain	0.264***	0.045	-0.105***	0.018	-0.115***	0.039	-0.044***	0.008
Mig. Networks	0.018***	0.005	-0.007**	0.003	-0.007*	0.005	-0.003*	0.002
Log Pseudolikelihood: -9,514.930								
LR Chi ² (48): 1,268.089								
Prob > Chi ² : 0.000								
N: 8,975								

*** indicates statistical significance at 1 percent level.

** indicates statistical significance at 5 percent level.

* indicates statistical significance at 10 percent level.

Notes: International immigrants are not included. Rest of Cat. + B.I. = Rest of Catalonia + Balearic Islands. The regression includes an intercept term, and is estimated using heteroskedasticity-robust standard errors. Reference categories are in parentheses.

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