IMMIGRANTS IN SPAIN: SKILLS ACQUISITION AND DEVELOPMENT. A REGIONAL STUDY*

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September 17, 2002

Abstract

The consequences of international migration for development in countries of origin and destination remain hotly debated. The immigration flows could be considered an appropriate mechanism to contribute to the development of origin countries if host countries recognize the qualifications of immigrants or contribute to the acquisition of skills. Correspondence analysis is used to determine the relation between education level, job position and legal situation of immigrants in Spain. The results indicate that immigrants are occupying non skilled tasks, even in the case of well educated immigrants. Furthermore, these immigrants have no options to increase their skills nor by experience (in the job) neither by theirself (attending a school), since the immigration police only authorizes very short migration. Hence, Spain is not contributing appropriately to the development of origin countries.

key words: Migration, skills, correspondence analysis

*This research was supported by Grant No PI9970 from the Basque Government and by Grant No 9/UPV-00038.321-13503/2001 from the University of the Basque Country

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1 Introduction

The most part of the international organizations agree in consider the skills of the immigrants and development as a part of the same problem. In this context, economic development is argued by international organizations and NGOs to force the developed world to tolerate immigration. The argument is based upon two lines: remittances and skills acquisition. By one part, remittances contribute to alleviate the poverty and the foreign debits of domestic economies; by other, the possibility to acquire new abilities and skills could contribute positively in the catch-up of developing countries. Nevertheless, the role of immigration are not clear neither for host countries, nor for origin countries. In other words, "the consequences of international migration for development in countries of origin and destination remain hotly debated" (Stanton-Rusell 2001), since immigration flows could reduce the stock of skilled workers of developing countries. Concerning to this problem, developing countries claim for compensations from destination countries due the loss of skilled personnel (UN 1999). Avoiding the polemic, UNFPA (1998) considers reasonable recommending to developed world maximize the benefits of skilled immigrants through the recognition of their qualifications and employment in appropriate positions. However, in spite of their solidarity with poor countries, the native population fear the impact of immigration over the domestic culture and standard of life. Otherwise, the natives of the host countries that are already annoyed because of the unemployment, feel their displeasure augmented, if immigrants are occupying skilled and well paid jobs. Consequently, some countries could decide to implement restrictive policies with respect the immigration of skilled workers, be avoiding their entrance, be limiting the access

of immigrants to skilled and well paid jobs. Then, migration may or may not contribute to the acquisition of skills abroad (Stanton-Rusell 2001).

1.1 The role of the European Union (EU)

The analysis of immigration must take into account that Spain is an EU Member State. Consequently, the EU policy on immigration matters. The Treaty of Maastricht in December 1991 and its coming into force in November 1993, supposed a first step in the recognition of the immigration as a common problem, which could not be solved only by securing outer borders. Hence, the Treaty of Maastricht considered the immigration problem at various levels: asylum, external borders, immigration (entrance, residence, family and illegal residence), traffic of drugs, international fraud, judicial cooperation, police and custom cooperation. Also, in 1993, the Commission recommend its Member States to prevent asylum seekers with economic purposes from receive the refugee status recognition; and control the illegal immigration (Rasmussen 1996). However, the Treaty of Amsterdam (1999) supposed a substantial advance in the design of an unique normative for all Member States. Firstly, introducing a common policy on immigration and asylum. Second, transferring from the third pillar to the first pillar the following subjects: asylum, external borders, immigration policy, cooperation in civil matters and customs cooperation. Broadly speaking, the targets are to eliminate the illegal immigration and to impose restrictions to the long run immigration. Hence, the EU "emphasized that these policies should of necessity be restrictive (...) and admission for temporary employment may therefore be considered only in terms of what is purely exceptional (EU 1996*e*)".

Then, recommendations of the international organizations and the immigra-

tion police of the EU Member States are clearly in contradiction, since the EU never declares the development of origin countries a target. Then, all efforts of EU Member States are focused to control and avoid the entrance of non authorized or desired immigrants. Furthermore, the EU immigration policy declare compulsive for all members to assume that immigration is only a temporal solution for origin and host countries. Consequently, designing a long run policy to provide skills to immigrants, in order to help developing countries to achieve the technological catch-up is clearly difficult. Despite the recognition of this problem (EU 1996*a*), only short run policies specially designed, could increase or adequate the skills of the immigrants to the actual technological requirements.

2 Data and Methodology

2.1 Data

The information about the education level of the 99.059 immigrants (INE 1999) accounted by the *Instituto Nacional de Estadística (INE)* is based on new registrations and registry removals in the municipal registers of inhabitants due to changes in residence. In fact, these are migrations and not immigrants, since a citizen may change his residence from one municipality to another one more than once a year. The "education level" data shows the categories Illiterate, First Basic Education, Second Basic Education and Secondary and More education. The data grouped by "Job Position" —Managerial, Scientists, Technicians, Administrative, Services, Clerical, Skilled Agriculture, Skilled Construction, Skilled Industry, Skilled Textile, Stationary Engine Operators, Maids, Sellers, Unskilled Agriculture, Unskilled Construction, Unskilled Industry and Unskilled Textile—,

and "Work Permits" —Seasonal less 1 year, Employee 1 year, Employee 2 year, Employee 3 year, Employee Permanent, Self-employed 1 year, Self employed 2 year, Self employed 3 year, Self employed Permanent—, show the structure of the 199.759 immigrants with work permits in Spain. These data are accounted by *Ministerio de Trabajo y Asuntos Sociales (MTAS 1999*b*, MTAS 1999*a*)*, given the information provided by the application form —work and residence— filled by immigrants and processed at the *Dirección General de Policía*. It is clear that the data "Education Level" is a flow and that the sets "Job Position" and "Work Permits" are stocks of immigrants. Consequently, the structure of data is not completely comparable, since the first data set accounts for the 99.059 international immigrants that changed its residence in 1999 and, the others two data sets accounts for the 199.759 immigrants legally residing and with work permits. This is a problem if we need to treat all the tables simultaneously, since both data sets are not related. Then, we will keep in mind these characteristics, in order to select the technique and correctly interpret the data.

Finally, all the data are analyzed by regions, given the administrative division of Spain in *Comunidades Autónomas* (*CC.AA.*) —Andalucía, Aragón, Asturias, Baleares, Canarias, Cantabria, Castilla León, Castilla La Mancha, Catalunya, Valencia, Extremadura, Galicia, Madrid, Murcia, Navarra, País Vasco and La Rioja—, in order to take into account the particular regional specialization and economic level of each *CC.AA.*

2.2 Methodology

The methodology applied to analyze the data is the Correspondence Analysis. This exploratory technique permits to reveal features in the data, without impos-

ing any hypothesis *a priori*. Also, is a technique very flexible allowing to analyze almost any kind of cross-tabulation. The aim of this technique is visualize in a low dimensional space (i.e. in $\mathbb{R}^n$ with $n \leq 3$) a set of data that belongs to a high dimensional space. Benzecri (1973) popularized in France this visualization technique using the algebraic formulation proposed by Hirschfeld (1935). However, this approach was almost unknown for English-speaking researchers until 1980, when the publication of several books, in special Greenacre (1984), Greenacre (1993) and Greenacre & Blasius (1994) with application to marketing research, rised the interest of researchers of others disciplines and countries in the use of these techniques. This study uses the approach proposed by Greenacre. .

The Correspondence Analysis (CA), uses a single cross-tabulation as input data and explore the importance of the association between rows and columns analyzing the χ^2 statistic for independence test. The "χ^2 distance" between individual entries and the center of the cloud is analyzed in order to establish which of the entries explains better the association between data and in which direction this association is. Thus, the CA approach can be used to investigate the substantive nature of the association between row and column categories of the contingence table. By other hand, the CA is a useful technique to visualize the data in a low dimensional space and consequently, we can easily interpret the relationship between rows and columns.

The CA is a fairly popular technique. Thus, only the main definitions will be given in order to make the results clear for readers. The proofs and extensions are in (Greenacre 1984) and (Greenacre & Blasius 1994).

Let a table be an $I \times J$ matrix of absolute frequencies n_{ij}, $i = 1, \ldots, I$ and $j = 1, \ldots, J$. Let define the marginal frequencies as total row $n_{i.}$ and total column

$n_{.j}$, and $n_{..}$ as the grand total.

Definition 2.1 ***Profile***. *A* ***row profile*** *is the vector of absolute frequencies of a row i divided by their total row, $p^r_{ij} = n_{ij}/n_{i.}$; a* ***column profile*** *is the vector of absolute frequencies of a column j divided by their total column, $p^c_{ij} = n_{ij}/n_{.j}$*

Definition 2.2 ***Mass*** *is the marginal frequency $n_{i.}$ or $n_{.j}$ relative to $n_{..}$ The* ***row mass*** *is $r_i = n_{i.}/n_{..}$ and the* ***column mass***, *$c_j = n_{.j}/n_{..}$.*

Definition 2.3 ***Inertia*** *is the χ^2 statistic defined in a proper manner divided by the grand total, i.e.*

$$Inercia = \frac{\chi^2}{n_{..}} = \sum_i \sum_j \frac{(n_{ij} - n_{..}c_j r_i)^2}{n_{..}^2 c_j r_i}$$

Thus, the objective of the CA is find the best projection of the cloud in a few axes, where the criterion to decide the best representation is the minimum distance between profiles and one axis. Given that the profile matrix (row or column) is in the dimension $K = \min\{I-1, J-1\}$ then, there are K possible axis then, each axis must be extracted taking into account that the former axis (axes) found is (are) the best. Let define $A = [a_{ij}] = D_r^{-1/2}(Y - rc^T)D_c^{-1/2}$given D_r and D_c, diagonal matrices of row masses and column masses; Y, the frequency matrix; $r^T = [r_1, \ldots, r_I]$ and $c^T = [c_1 \ldots, c_J]$, the vectors of masses. The next theorem guarantees the existence of a solution.

Theorem 2.1 ***Singular Value Decomposition*** *$A = U\Lambda V$ solves the problem of minimize the distance between a point and their projection over a low dimensional plane. Furthermore, the properties of the solution are*

1. *The matrix Λ is diagonal and the elements $\lambda_1 \geq, \ldots, \geq \lambda_K$. These numbers are called the singular values. The sum of these λ_i^2 for all $i = 1, \ldots, K$ is the total inertia.*

2. *The matrix U and V are orthonormal, i.e. $U^T U = I$ and $V^T V = I$.*

The theorem 2.1 guarantees that exists a function which maps each original point from its original coordinate system to a new coordinate system. There are two symmetrical possible solutions (each point belongs to $\mathbb{R}^I$ or to $\mathbb{R}^J$). Thus, rows can be seen as individuals explained by the column categories or columns can be seen as individuals explained by the row categories. Then, the best representation of each point (individuals) are called *principal axes* and the inertia accounted by a principal axis is called *principal inertia*. Furthermore, each original category can be plotted in the new coordinate system. The coordinate position of vertices with respect to the principal axes are called *standard coordinates*.

Theorem 2.2 *Given the solution 2.1, denoting $V = [v_{ij}]$ and $U = [u_{ij}]$, for $k = 1, \ldots, K$ then, the* ***Standard Coordinates*** *are given by $\phi_{ik} = u_{ik}/\sqrt{r_i}$ and $\gamma_{jk} = v_{jk}/\sqrt{c_j}$. and the* ***Principal Coordinates*** *are given by $f_{ik} = \lambda_k \phi_{ik}/\sqrt{r_i}$ and $g_{jk} = \lambda_k \gamma_{jk}/\sqrt{c_j}$.*

Given $A = [a_{ij}]$ the total inertia of the contingence table is $\sum_i \sum_j a_{ij}^2 = \sum_k \lambda_k^2$. Then, each λ_k^2 quantify the inertia explained by each axis. Also, the total inertia can be decomposed in the inertia of rows and columns, i.e. in the partial sums $\sum_j a_{ij}^2$ (for the ith row) and $\sum_i a_{ij}^2$ (for the jth column). The relation between both magnitude measures the quality of displays and decompose the information contained in the solution.

Definition 2.4 *The* ***Square Correlations,*** r^2 *of the rows with the principal axes are the inertia components expressed relative to the row inertia. Then, the Contribution of the* k*th principal axis to the* i*th row is* $r_i f_{ik}^2 / \sum_j a_{ij}^2$ *and to the* j*th column is* $c_i g_{jk}^2 / \sum_i a_{ij}^2$*. These quantities are interpreted as the square cosine of the angles between each profile and each principal axis.*

Also, square correlations are a measure of the **Quality of the display** of a row (column) since quantify the contribution of the k first axes to the inertia of the row (column).

Definition 2.5 *The* ***Contribution to the inertia*** *is given by the contribution of the* i*th row to the principal inertia of the* k*th axis* $r_i f_{ik}^2 / \lambda_k^2$ *or by the contribution of the* j*th column to the principal inertial of the* k*th axis* $c_j g_{jk}^2 / \lambda_k^2$*. These contribution measure in what extent the geometric orientation of an axis is determined by a single variable categories.*

Theorem (2.1) guarantee the symmetry of the analysis between rows and columns. Then, the interpretation of results can be made by means of contributions to the total inertia and inertia of each axis and by means of correlation of each point with axes. Thus, given the biggest contributions of columns (rows) to inertia of one axis, this can be labeled. Then, each row (column) point can be represented in the plane —assuming an $\mathbb{R}^2$ representation—, such that its quality measures if it is well represented, given the best represented rows (columns). Finally, square correlations of the best represented row (column) points are used to determine which coordinates are significant and characterize these points.

3 Results

3.1 χ^2 test

Before analyzing the χ^2 statistic we must explain the number of total individuals included in each analysis. From all tables we excluded the categories with more than 25% of entries with zero individuals, in order to avoid non desired effects. Then the categories *Border Permits (F)* and *Extraordinary Permits* are excluded from the data set. Furthermore, the categories *Ceuta* and *Melilla*, are excluded, since both *Comunidades* are in Africa and the pressure of immigration is quite difficult to evaluate. Also, the education level E have been excluded, since CA solution is completely conditioned by this category, despite their relative non importance.

Table 1: Inertia and χ^2 statistic

Variable	$n_{..}$	**K**	χ^2	**Inertia**	**V Cramer**
Education	99,059	3	5,999	0.06	0.15
Legal Status	197,265	8	20,985	0.11	0.12
Job	195,141	15	102,797	0.53	0.19

Table 1 show the number of individuals analyzed and the χ^2 statistic, which clearly rejects the null hypothesis of homogeneity between rows and columns. Nevertheless, in the last column the *Cramer's V* defined as $V = \sqrt{\chi^2/nK} \in [0, 1]$ provide crude measure for the variation in the data. The values between 0.1 and 0.3 for the three tables shows a not very high variability. Consequently, the most part of points will be represented in the middle of both axis. Nevertheless, these values are sufficiently high as to consider that there is more than purely random effect.

Table 2: Results for Education Level

	Category	Id.	Qual	Mass	Inert	Axis 1 (59%)			Axis 2 (33%)		
						Coord	$\sqrt{r^2}$	Contr	Coord	$\sqrt{r^2}$	Contr
CC.AA.	Andalucia	And	0.336	0.123	0.046	-0.087	0.580	0.026	-0.002	0.000	0.000
	Aragon	Ara	0.874	0.006	0.004	-0.165	0.857	0.005	-0.072	0.374	0.002
	Asturias	Ast	0.834	0.009	0.024	0.293	0.748	0.023	-0.206	0.524	0.020
	Balears	Bal	0.997	0.035	0.077	0.320	0.883	0.102	0.169	0.466	0.050
	Canarias	Can	0.961	0.107	0.062	0.159	0.844	0.075	0.094	0.499	0.047
	Cantabria	Ctb	0.849	0.003	0.001	0.159	0.908	0.002	0.027	0.155	0.000
	Castilla-Leon	CasL	0.891	0.019	0.001	-0.057	0.897	0.002	-0.019	0.295	0.000
	Castilla-Mancha	CasM	0.944	0.013	0.013	-0.160	0.649	0.010	-0.178	0.723	0.021
	Catalunya	Cat	0.935	0.134	0.100	-0.008	0.032	0.000	-0.206	0.966	0.283
	Valencia	Val	1.000	0.182	0.196	-0.149	0.584	0.114	0.208	0.812	0.390
	Extremadura	Ext	0.999	0.014	0.120	-0.672	0.950	0.184	-0.219	0.310	0.035
	Galicia	Gal	0.319	0.024	0.010	0.034	0.212	0.001	-0.084	0.523	0.009
	Madrid	Mad	0.948	0.253	0.060	0.105	0.880	0.079	-0.050	0.418	0.032
	Murcia	Mur	0.906	0.032	0.173	-0.543	0.948	0.263	-0.050	0.089	0.004
	Navarra	Nav	0.984	0.005	0.002	-0.106	0.664	0.002	0.117	0.737	0.004
	Pais Vasco	Eus	0.924	0.030	0.045	0.229	0.756	0.044	-0.180	0.594	0.048
	La Rioja	Rij	0.947	0.010	0.064	0.501	0.808	0.070	0.337	0.542	0.057
Education Level	Illiterate	A	0.536	0.116	0.118	-0.044	0.176	0.006	-0.176	0.711	0.180
	First Basic Stage	B	0.97	0.368	0.311	-0.222	0.983	0.509	-0.014	0.063	0.004
	Second Basic Stage	C	0.985	0.254	0.252	0.095	0.390	0.065	0.223	0.913	0.632
	Secondary and More	D	0.967	0.261	0.320	0.240	0.880	0.420	-0.119	0.438	0.185

Source: Variaciones Poblacionales. Instituto Nacional de Estadística (INE 1999)

Table 3: Results for Jobs Position

	Category	Id.	Qual	Mass	Inert	Axis 1 (64%)			Axis 2 (14%)		
						Coord	$\sqrt{r^2}$	Contr	Coord	$\sqrt{r^2}$	Contr
CC.AA.	Andalucia	And	0.935	0.123	0.132	0.712	0.947	0.186	0.146	0.038	0.036
	Aragon	Ara	0.370	0.034	0.024	0.260	0.429	0.007	-0.261	0.186	0.032
	Asturias	Ast	0.023	0.011	0.214	-0.354	0.110	0.004	0.337	0.011	0.017
	Balears	Bal	0.126	0.026	0.018	-0.199	0.327	0.003	0.083	0.019	0.002
	Canarias	Can	0.857	0.044	0.116	-0.411	0.351	0.022	1.004	0.734	0.617
	Cantabria	Ctb	0.365	0.005	0.007	-0.355	0.400	0.002	0.401	0.204	0.011
	Castilla-Leon	CasL	0.530	0.026	0.009	0.270	0.653	0.006	-0.133	0.104	0.006
	Castilla-Mancha	CasM	0.088	0.020	0.007	-0.088	0.207	0.000	0.091	0.045	0.002
	Catalunya	Cat	0.582	0.276	0.069	-0.207	0.570	0.035	-0.184	0.257	0.129
	Valencia	Val	0.338	0.061	0.016	0.091	0.249	0.002	0.192	0.275	0.031
	Extremadura	Ext	0.967	0.020	0.066	1.288	0.982	0.100	0.050	0.001	0.001
	Galicia	Gal	0.243	0.015	0.047	-0.215	0.164	0.002	0.605	0.215	0.074
	Madrid	Mad	0.741	0.248	0.201	-0.558	0.854	0.231	-0.069	0.011	0.017
	Murcia	Mur	0.969	0.064	0.260	1.439	0.982	0.394	-0.091	0.004	0.007
	Navarra	Nav	0.446	0.017	0.005	0.067	0.167	0.000	-0.258	0.417	0.016
	Pais Vasco	Eus	0.363	0.014	0.014	-0.386	0.538	0.006	0.195	0.074	0.007
	La Rioja	Rij	0.374	0.007	0.010	0.425	0.486	0.004	-0.326	0.139	0.010
Job Position	Managerial	Man	0.855	0.047	0.034	-0.172	0.281	0.004	0.540	0.776	0.189
	Scientists	Sci	0.487	0.025	0.013	-0.293	0.550	0.006	0.229	0.184	0.018
	Technicians	Tec	0.622	0.023	0.015	-0.177	0.300	0.002	0.430	0.532	0.059
	Administrative	Adm.	0.872	0.017	0.008	-0.294	0.597	0.004	0.355	0.517	0.029
	Services	Serv	0.900	0.106	0.036	-0.336	0.796	0.036	0.218	0.267	0.070
	Clerical	Cle	0.777	0.025	0.052	-0.294	0.279	0.006	0.878	0.698	0.263
	Skilled Agriculture	Sk.Ag	0.185	0.006	0.008	0.238	0.295	0.001	0.254	0.098	0.005
	Skilled Construction	Sk.Con	0.633	0.028	0.013	-0.385	0.790	0.012	-0.046	0.009	0.001
	Skilled Industry	Sk.Ind	0.074	0.012	0.009	-0.166	0.270	0.001	-0.007	0.000	0.000
	Skilled Textile	Sk.Tx	0.221	0.022	0.020	-0.135	0.195	0.001	-0.294	0.183	0.026
	Stationary engine operators	Op.Ma	0.516	0.012	0.004	-0.280	0.704	0.003	0.055	0.019	0.001
	Maids	House	0.724	0.277	0.145	-0.421	0.801	0.146	-0.150	0.082	0.086
	Sellers	Sell	0.126	0.043	0.054	0.168	0.205	0.004	0.237	0.084	0.033
	Unskilled Agriculture	Uk.Agr	0.992	0.212	0.478	1.085	0.995	0.744	-0.036	0.001	0.004
	Unskilled Construction	Uk.Con	0.541	0.061	0.039	-0.327	0.563	0.019	-0.275	0.224	0.063
	Unskilled Industry	Uk.Ind	0.359	0.044	0.034	-0.157	0.247	0.003	-0.348	0.299	0.074
	Unskilled Textile	NoCla.	0.362	0.040	0.040	-0.224	0.310	0.006	-0.373	0.266	0.078

Source: Permisos de Trabajo por Ocupación, (MTAS 1999*a*)

Table 4: Results for Work Permits

	Category	Id.	Qual	Mass	Inert	Axis 1 (42%)			Axis 2 (35%)		
						Coord	$\sqrt{r^2}$	Contr	Coord	$\sqrt{r^2}$	Contr
CC.AA.	Andalucia	And	0.577	0.122	0.031	-0.044	0.265	0.005	-0.117	0.712	0.044
	Aragon	Ara	0.03	0.034	0.003	-0.014	0.138	0.000	0.011	0.110	0.000
	Asturias	Ast	0.45	0.011	0.008	0.099	0.348	0.002	-0.163	0.574	0.008
	Balears	Bal	0.098	0.026	0.131	0.048	0.063	0.001	-0.225	0.305	0.035
	Canarias	Can	0.703	0.044	0.069	-0.166	0.407	0.027	-0.300	0.733	0.105
	Cantabria	Ctb	0.783	0.005	0.018	-0.003	0.000	0.000	-0.560	0.885	0.041
	Castilla-Mancha	CasL	0.262	0.026	0.004	0.060	0.472	0.002	-0.025	0.197	0.000
	Castilla-Leon	CasM	0.662	0.020	0.021	0.052	0.155	0.001	-0.272	0.799	0.038
	Catalunya	Cat	0.993	0.273	0.235	-0.260	0.860	0.411	0.152	0.504	0.168
	Valencia	Val	0.906	0.061	0.074	-0.007	0.000	0.000	-0.343	0.952	0.189
	Extremadura	Ext	0.016	0.020	0.006	0.012	0.071	0.000	0.018	0.105	0.000
	Galicia	Gal	0.851	0.015	0.094	-0.078	0.095	0.002	-0.760	0.918	0.223
	Madrid	Mad	0.988	0.245	0.244	0.309	0.950	0.521	0.095	0.293	0.059
	Murcia	Mur	0.79	0.063	0.035	0.084	0.348	0.010	0.197	0.818	0.065
	Navarra	Nav	0.444	0.017	0.013	0.130	0.445	0.006	-0.144	0.495	0.009
	Pais Vasco	Eus	0.527	0.014	0.006	-0.093	0.434	0.003	-0.125	0.582	0.006
	La Rioja	Rij	0.738	0.006	0.009	-0.230	0.610	0.008	0.228	0.605	0.009
Work Permit	Seasonal less 1 year	A	0.055	0.004	0.129	-0.270	0.138	0.006	-0.371	0.190	0.013
	Employee 1 year	b	0.974	0.236	0.248	0.328	0.980	0.565	-0.039	0.118	0.010
	Employee 2 year	B	0.507	0.204	0.062	-0.124	0.688	0.070	-0.033	0.187	0.006
	Employee 3 year	C	0.759	0.316	0.069	0.024	0.161	0.004	0.130	0.856	0.142
	Employee Permanent	Per_CA	0.919	0.150	0.171	-0.287	0.825	0.275	0.170	0.488	0.115
	Self employed 1 year	d	0.766	0.006	0.019	-0.187	0.315	0.004	-0.486	0.817	0.035
	Self employed 2 year	D	0.873	0.011	0.050	-0.109	0.155	0.003	-0.643	0.921	0.121
	Self employed 3 year	E	0.916	0.043	0.142	-0.090	0.152	0.008	-0.562	0.945	0.359
	Self employed Permanent	Per_CP	0.887	0.031	0.111	-0.305	0.499	0.065	-0.489	0.799	0.200

Source: Clases de Permisos de Trabajo Concedidos. (MTAS 1999*b*)

3.2 Education Level

Table (2) shows that the contribution to the first axis formation of the categories B and D are 51% and 42%, respectively; then the first axis opposes immigrants with basic education (negative score) to immigrants with high education (positive score). The 63% of the second axis formation is due to the category C, opposing the secondary education (positive scores) to the rest of the categories (negative scores). The Figure (1) illustrates the results. The 92% of total inertia is accounted by the first two axis, 59% by the first and 33% by the second. Then, both axis should be considered in the analysis. The quality of the representation of the most part of $CC.AA.$ is greater than 85%, excepting by Andalusia (33%) and Galicia (32%), which will nor be analyzed.

Table (2) shows that Cantabria, Murcia, Extremadura, Castilla la Mancha and Aragón correlate highly with the first axis; Catalunya with the second axis; and Baleares, Canarias, La Rioja, Valencia, Navarra , Asturias, Madrid, País Vasco, Valencia and Navarra correlate highly with both axes.

Given this information, the figure (1) can be systematically interpreted. Murcia, Extremadura, Castilla León and Aragón correlates only with first axis, and these are on the left of figure (1), then these communities are characterized by immigrants with basic education level; Cantabria, on the right of figure (1) correlates only with first axis also, therefore Cantabria is characterized by immigrants with high education. Catalunya correlates only with second axis, and their negative score shows that the education level of immigrants of this community is indeterminate; similarly, Castilla León on the bottom left is indeterminate. The remaining communities correlates with both axis: Baleares, Canarias and La Rioja shows positive scores in both coordinates; then these communities seem have

immigrants with medium-high education level; Valencia and Navarra are on the top left side of figure (1), immigrants possess basic or medium studies; Asturias, Madrid and the Basque Country, on the left bottom seems to be characterized by immigrants highly educated.

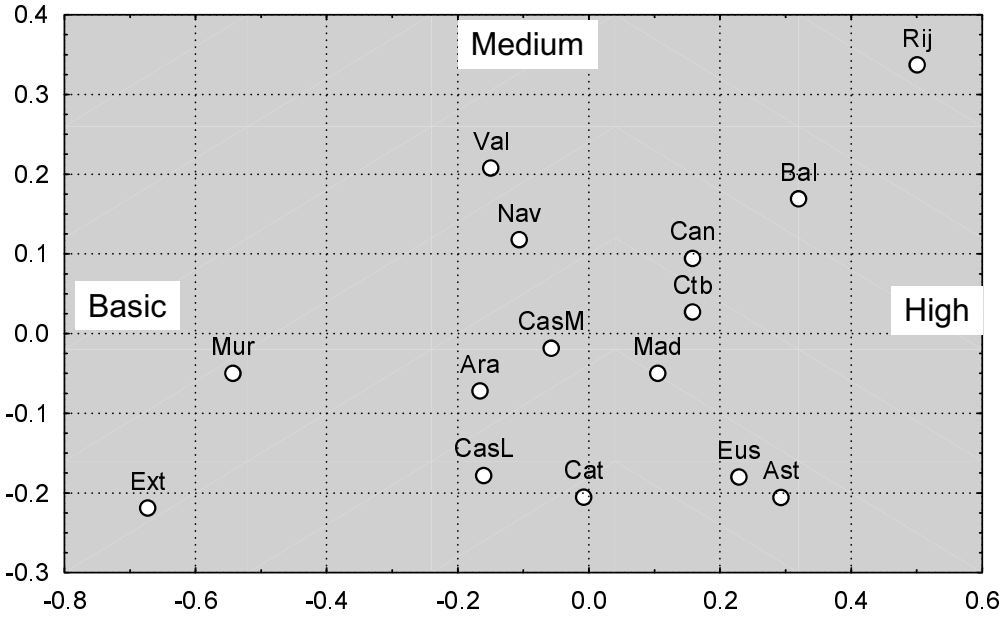

Figure 1: Education Level

3.3 Job Position

Table 3 shows the results for the job position declared by immigrants. The contribution to the first axis formation of the categories *Maids* and *Unskilled Agriculture* are 15% and 74%, respectively; then the first axis opposes *maids and related housekeeping services* immigrants workers (negative score) to *Unskilled Agriculture* immigrants workers (positive score). The second axis formation is due to a two surprising categories: 19% of the second axis formation is due to the category *Managerial* immigrant workers (positive scores) opposing *Clerical*

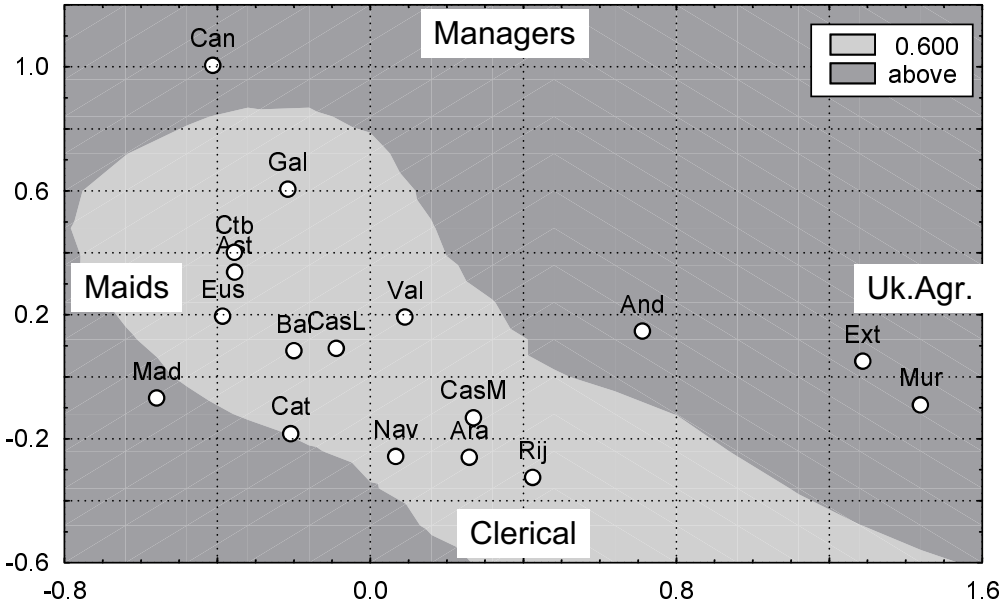

Figure 2: Job Position

and related immigrant workers, contributing 26% to axis formation (negative scores). The 78% of total inertia is accounted by the first two axis, 64% by the first and 14% by the second. The quality of the representation of the most part of *CC.AA.* is smaller than 60%. Only Andalusia (94%), Canarias (86%), Extremadura (97%), Madrid (74%) and Murcia (97%) overcome this lower bound. However, the mass of these communities sums up to 50% indicating that only Catalunya (58%) and Valencia with high masses are not to much well represented. Figure (2) represents the quality of representation of each *CC.AA.* by colors. In light gray, appear the points whose quality is smaller than 60% and in dark gray, points whose quality is greater than 60%.

Andalusia (0.95), Extremadura (0.98), Castilla la Mancha (0.65) and Murcia (0.98) on the right of Figure (2) correlates highly with first axis, —correlations are displayed in parenthesis—, indicating that these communities are characterized

by unskilled agriculture workers; Madrid (0.85), on the left, is characterized by maids and related housekeeping services immigrants workers. Canarias (0.86), on the top of second axis, is the unique community with high correlation with this axis, indicating that is characterized by managerial and related workers. Catalunya, on the left bottom, correlates weakly with both axis (0.57 and 0.51) and is characterized by maids and clerical immigrant workers.

3.4 Work Permits

Table 4 shows the results for the work permits or legal status of workers immigrants. The contribution of the categories *Employee less than one year* and *Employee Permanent* to the first axis formation are 57% and 28%, respectively; then the first axis opposes immigrants employees with very short term work permits (positive score) to immigrants employees with long term work permits (negative score). The second axis formation is due employee with long term work permits (26%) on the top (positive scores), and long term self employed immigrant workers (68%) on the bottom (negative scores). The 77% of total inertia is accounted by the first two axis, 42% by the first and 35% by the second.

Figure (3) represents the quality of representation of each $CC.AA.$ by colors. In light gray, appear the points whose quality is low and in dark gray, the points whose quality high (dark gray). In the left bottom, the legend shows the border limits of each color measured in quality of displays: the best represented communities —in dark gray— are Canarias, Cantabria, Catalunya, Valencia, Galicia, Madrid, Murcia and La Rioja, with more than 70% of total point inertia explained by the first 2 axes, or plane; between 70-35% of the inertia of Andalusia, Asturias, Castilla León, Navarra and País Vasco is accounted by the plane —

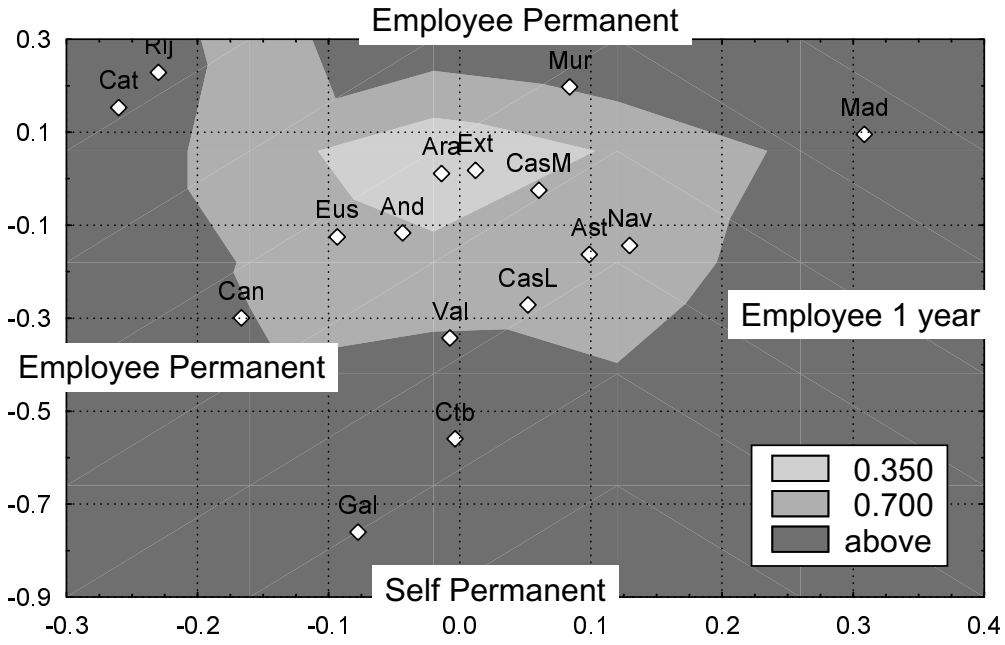

Figure 3: Legal Status

in gray—; Aragón, Castilla la Mancha and Extremadura —in light gray—, are the communities worst explained, since the plane explain less than 35% of point inertia.

Table (4) shows that Catalunya (0.86) and Madrid (0.95) correlate highly with the first axis only; Andalusia (0.72), Canarias (0.74), Cantabria (0.88), Castilla la Mancha (0.80), Valencia (0.95), Galicia (0.92) and Murcia (0.82) with the second axis only; La Rioja (0.61 and 0.61) correlates with both axes. Given this information, the figure (3) is systematically interpreted: Madrid, on the right of figure (3) is opposes to Catalunya on the left, indicating that Madrid is characterized by immigrants employees with very short term work permits and Catalunya, by employees with long run work permits. From top to bottom, Murcia in the top is characterized by immigrants employees with long term work permits opposed to Andalusia, Canarias, Cantabria, Castilla la Mancha, Valencia

and Galicia on the bottom, indicating that these communities are characterized by self employed immigrants with very long term immigrants.

3.5 General Overview

Table 5 shows one global appreciation of the results. The first column shows the number of immigrants with work permission for each 1000 inhabitants. No Community attain to 20 immigrant workers for each 1000 inhabitants. Therefore, one can affirm that Spain in 1999 was not an immigration country, at least for the legal migration. The other columns present a result enough disappointing, only four rows, corresponding to Catalunya, Madrid, Canarias and Murcia, are full. The other rows or communities do not present any characteristic that identifies them. For these three communities we reach the conclusion that: Catalunya, is characterized by maids and clerical immigrants with a very stable legal status; Madrid, traditionally consecrated to the sector services, it represents 25% of the total of immigrant residents in Spain, it is characterized by very educated immigrants that work in non skilled jobs (maids and housekeeping) and with short term permits; Canarias, is characterized by educated immigrants self-employed occupying managerial jobs, a surprising result; and Murcia, is characterized by immigrants with basic studies devoted to non skilled agrarian activities with work permits of long duration.

Table Summary

Observing the last column, we verify that, except for some cases, most of the communities are correlated with the category *self-employed*, although this category only represents 9% of the total immigrants–see mass column in table 3—. Are exceptions Madrid and Catalunya. In the case of Catalunya, devoted

Table 5: Summary

Community	(1)	Education Level	Job Position	Legal Status
Andalusia	3.36%	—	Unskilled Agriculture	Self-employed Long
Aragón	5.70%	Basic	—	—
Asturias	2.00%	High	—	—
Baleares	6.90%	Medium-High	—	—
Canarias	5.48%	Medium-High	Managers	Self-employed Long
Cantabria	1.82%	High	—	Self-employed Long
Castilla M	2.05%	Basic	Unskilled Agriculture	—
Castilla L	2.27%	Basic	—	Self-employed Long
Catalunya	8.87%	Indeterminate	Maids and Clerical	Employee Long
Valencia	3.04%	Basic-Medium	—	Self-employed Long
Extremadura	3.65%	Basic	Unskilled Agriculture	—
Galicia	1.05%	—	—	Self-employed Long
Madrid	9.64%	High	Maids	Employee Short
Murcia	11.42%	Basic	Unskilled Agriculture	Employees Long
Navarra	6.32%	Basic-Medium	—	Empl. Short, Self. Long
País Vasco	1.33%	High	—	Empl. and Self. Long
La Rioja	4.75%	High-Medium	—	Employee Long

(1) Immigrant workers per 1000 inhabitants

traditionally to the trade and textile industry, represents 28% of the total applications of work permits, and is not characterized by any specific educational level or position of the work, but is characterized by immigrants employees with permanent work permits.

4 conclusion

Consequently, the international immigration in Spain, have a non clearly identifiable pattern. On one hand, in general, despite 12% of immigrants are illiterate, this category is not clearly significant in any community. For other, categories that are not traditional immigrant occupations turn out to characterize the communities, like in the case of *managers* in Canarias or *self-employees* in other cases. This result is very difficult of valuing without entering in polemic or in difficultly contrastable statements.

Generally speaking, Murcia — with low qualified immigrants that work in unskilled jobs but with permits of long duration—, could facilitates that the immigrant qualify by themselves attending a school. However, Madrid seems to implement an inadequate politics from the point of view of the development, since it is characterized by educated immigrants working in unskilled jobs with short duration permits, which could impede immigrants qualify themselves by attending a school or realizing a skilled job in host country. Finally, Catalunya could improve development policies to get better educational level of its immigrants, but this study indicates that an educational level that prevails does not exist.

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