

Article

Comparing Regional Attitudes toward Immigrants in Six European Countries

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Abstract: Many immigrants have risked their lives searching for a better future by crossing the Mediterranean Sea or the Atlantic Ocean. The Canary Islands became the centre of another emerging humanitarian and human rights crisis at Europe's frontier in 2020. The study aims to analyse whether attitudes towards immigrants are affected by territories close to these humanitarian crises. To this end, the study is based on previous studies using a Fuzzy-Hybrid TOPSIS method to analyse attitudes toward immigrants. The synthetic indicator will be built upon a set of eight indicators that proxy the ethnic, economic, cultural, and religious threats experienced by the citizens. The International Social Survey Program (ISSP) dataset for the year 2013 for six countries, namely Belgium, Germany, Spain, France, United Kingdom, and Portugal, will be used. Results show that the attitude toward immigrants is affected by the territorial dimension as classified by the nomenclature of territorial units for statistics at NUTS2 and NUTS3 levels, and that attitudes are very different between those of some of the archipelagos and islands considered in the study. In particular, our results point out a sort of duality between the Balearic Islands—the most open territory toward immigrants, and Corse—the least open territory toward immigrants.

Keywords: attitudes toward immigrants; Europe; island regions; International Social Survey Program (ISSP); Fuzzy-Hybrid TOPSIS

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1. Introduction

In recent years, migration flows have been growing in the Mediterranean Sea and the Atlantic Ocean. Southern European islands have increasingly been a port of arrival for migrants [1,2]. This phenomenon has developed an important public and academic debate on the attitude towards immigrants. Many scholars argue that the anti-immigrant sentiment can depend on the country and socioeconomic characteristics [3–5].

Despite the scientific academic advances in the study of attitudes towards immigrants (ATI) and their related methods, the literature confirms that Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) have been the most frequently adopted approaches to study immigration attitudes. These methods are based on measurement models in which latent variables are obtained using econometric models adapted to the observed elements [6,7].

However, other methodological approaches that have been used in different fields are less common. This study aims to introduce one of these less-common methods in the field of social sciences, the Fuzzy-Hybrid TOPSIS. The approach has been applied in other disciplines, leading to interesting findings [8–10]. The data are extracted from the International Social Survey Program (ISSP) and the analysis of the attitudes toward immigration was conducted for six European countries, considering the regions at NUTS2 and NUTS3 levels. First, country-level research is conducted. Then, the paper analyses ATI across different

socioeconomic characteristics, such as religion, age, income, citizenship, gender, education, work status, and political orientation. As a last step, ATI across regional territories is analysed in order to detect which areas present more positive attitudes toward immigrants.

The paper complements other studies [11–15] using a new approach in the field that has not been commonly used. Therefore, our study will serve as a guideline to apply a new quantitative method based on fuzzy logic and expand the literature of studies on attitudes toward immigrants at the territorial level.

2. Theoretical Background

The anti-immigration and exclusionary sentiment of immigrants derives from a perception of the threat to the natives. This threat affects the social, cultural, and institutional status of a country's society [3,16].

Scholars have attributed negative attitudes towards immigrants to various individual factors, such as religion, political orientation, citizenship, or economic status [3,4,15–17]. Martín and Indelicato [1,5] affirm that openness toward immigrants can depend on the socio-economic characteristics of citizens. They focused on a division of Europe into the most open countries to immigration, i.e., those of central and northern Europe, and those that have shown more hostility to immigration (Eastern Europe). Furthermore, they found religion, education, and age as the main determinants of attitudes towards immigrants. At the country level, Davidov and Semyonov [18] argue that anti-immigration sentiments are shaped by terrorist events, the social and political climate of institutions, number of immigrants, and integration policies.

In the global context of immigration, studying the phenomenon at a regional level is arousing much interest among scholars [12–15,19]. Dirksmeier (2021) states that although regionalism per se does not influence the feeling of hostility towards immigrants, local economic disparities may accentuate a trend of negative attitudes towards immigrants.

On the other hand, Markaki and Longhi [14] affirm that anti-immigrant sentiment is a regional factor rather than a national one. They focus on the study of attitudes towards immigrants in a local context, analysing the impact of regional characteristics on anti-immigrant sentiment. They conclude that regional unemployment and high levels of immigration from outside the EU negatively affect natives' attitudes towards immigrants. Although the economic level does not particularly determine anti-immigrant sentiment among regions, the characteristics of immigrant populations are a critical factor in the construction of these sentiments [14].

The relationship between ethnic regional sentiment and anti-immigrant attitudes has been studied by Escandell and Ceobanu [15]. They explain that at the aggregate level, the results show that where there are high levels of feeling of regionalism, there are often high levels of exclusion of immigrants. Thus, they trace individual prejudice to the collective values of specific regions. Similarly, Sanjay Jeram et al. [20] find that hostile attitudes towards immigration can be masked under the umbrella of regionalism or regional identity.

Eger and Breznau [11] shifted the focus of the analysis from national-level attitudes towards immigration to the impact of immigration on regional-level welfare allocation attitudes. In other words, while the literature focuses on a transnational analysis of anti-immigration attitudes, Eger and Breznau [11] examine the contextual determinants of anti-immigrant sentiment in European regions. In particular, they address whether and to what extent the size of the region's foreign-born population has reduced support for national welfare state programs. They analysed 114 regions and concluded that although the percentage of immigrants in the region has reduced support for generous welfare state policies, immigration itself has not increased its opposition to the social rights of immigrants in the regions [18]. Karreth et al. [13] show that locals living in regions with traditionally high levels of immigration tend to be more open to immigrants. However, recent increases in immigration and immigration levels in socially "racially diverse" and economically less developed regions of Europe are generally associated with a lower acceptance of immigration, but only among natives who vote for right-wing parties [13].

Dalle Nogare et al. [19] presented a cross-country analysis across Italian territories and found that the increase in the population support to some anti-immigration parties may be negatively correlated with the presence of public policies that are addressed to immigrants' integration, such as free or discounted access to museums.

Thus, anti-immigrant sentiment has increased in the last few years in a regional context. Researchers have also focused on the peculiar context of island regions [21–23]. For example, in recent years, there have been demonstrations against the “invasion” of immigrants in the Canary Islands. The motto of these demonstrations proclaimed the islanders' right to have their own territory “free of blood” and to “be saved from invasion” [23]. Similarly, in Corsica, the population feels a loss of identity and accuses the institutions of this loss as they feel abandoned because of the massive immigration from North Africa. This fact has fuelled in the Corsican islanders an ever-larger increase in the negative attitudes toward immigrants [22]. The author attributes the Corsican anti-immigrant sentiment to a crumbling economic and social situation, which is correlated with a loss of identity and generates an increase in racism and xenophobia.

On the contrary, after years of emigration, in recent years, the Balearic Islands in Spain have experienced a significant increase in new citizens. Immigrants come from central and northern European countries and do not seek economic stability, and they are not even fleeing a war. Following Provenzano [24], there is a nexus between migration and tourism flows. Immigrants to the Balearic Islands are often citizens that at a first glance were attracted by the archipelago because of tourism and then have returned as immigrants. Therefore, this has not caused economic and cultural instability, and consequently, the Balearic attitudes towards immigrants are positive [21].

3. Data

This study uses the International Social Survey Program (ISSP) dataset for 2013. ISSP is a cross-national study on diverse topics relevant to social sciences. Many scholars have adopted the ISSP dataset to study attitudes toward immigrants [11,12,25]. The data we consider cover six European countries, namely Belgium, Germany, Spain, France, the UK, and Portugal. Due to the different regional level of the data provided by the ISSP dataset (2013), Belgium, Germany, Portugal, and Spain will be analysed at the NUTS2 level; France at the NUTS3 level; and the UK at the NUTS1 level. The choice of countries allows for analysing the differences between continental regions and islands in Europe, in line with the main objective. In addition, countries including separatist territories were selected to broaden the comparison.

Nine thousand sixty-six was the total number of individuals interviewed, distributed across countries as reported in Table 1. There were more females (51.67%) than males (48.24%). The vast majority of the sample was represented by natives (92.69%) compared to foreign citizens (6.43%). Almost 50% of the sample was in paid work, while only 4.47% was studying. Twenty-four-year-old or younger citizens represented the smallest age group in the sample (7.70%), whereas the 45–54 age group represented the biggest one (18.94%). The sample was almost equally distributed across medium incomes, and the highest and lowest income categories represented only 0.87% and 2.10% of the sample, respectively. More than 60% of the sample preferred that newcomers adapt to the traditions of the larger society. From the political views side, more than 55% was moderate, in which conservatives represented 21.97%, left-centre citizens 23.90%, and liberals 9.20% and the extremist wings, far-left and far-right, 4.40% and 2.69%, respectively. Finally, the majority of the respondents were Catholic (44.50%) or agnostic (31.50%).

Table 1. Descriptive statistics ¹.

Country	N	%	Traditions	N	%
Belgium	2202	24.29	Maintain trad.	1768	19.50
France	2017	22.25	Adapt	5453	60.15
Germany	1717	18.94	Citizenship	N	%
Portugal	1001	11.04	Natives	8403	92.69
Spain	1225	13.51	Foreigner	583	6.43
UK	904	9.97	Income	N	%
Education	N	%	Lowest. Bottom	190	2.10
No formal edu	222	2.45	Income2	238	2.63
Primary school	761	8.39	Income3	478	5.27
Lower secondary	2383	26.29	Income4	771	8.50
Upper secondary	1741	19.20	Income5	1811	19.98
Post-secondary	1201	13.25	Income6	1685	18.59
Lower-level tertiary	1293	14.26	Income7	1371	15.12
Upper-level tertiary	1326	14.63	Income8	761	8.39
Main status	N	%	Income9	130	1.43
In paid work	4516	49.81	Highest. Top	79	0.87
Unemployed	775	8.55	Political Orientation	N	%
In education	405	4.47	Far left	399	4.40
Apprentice or trainee	77	0.85	Left	2167	23.90
Permanently sick or disabled	176	1.94	Center. Liberal	834	9.20
Retired	2479	27.34	Right	1992	21.97
Domestic work	494	5.45	Far right	244	2.69
Other	107	1.18	Other	414	4.57
Gender	N	%	Religion	N	%
Male	4373	48.24	No religion	2856	31.50
Female	4684	51.67	Catholic	4042	44.58
Age	N	%	Protestant	877	9.67
24 years or under	698	7.70	Orthodox	40	0.44
25–34 years	1343	14.81	Other Christian	629	6.94
35–44 years	1463	16.14	Jewish	24	0.26
45–54 years	1717	18.94	Islamic	290	3.20
55–64 years	1587	17.50	Other religion	124	1.37
65–74 years	1301	14.35			
75 years or over	941	10.38			

¹ Some categories do not add to 100 because the variable contains some missing values.

The ISSP National Identity module contains eight items that concern the immigration issue. As in [26], the items chosen to measure the attitudes toward immigrants (ATI) are:

1. Immigrants increase crime rates;
2. Immigrants take jobs away from people born in [Country];
3. Legal immigrants should have the same rights;
4. Immigrants are generally good for the economy;
5. Immigrants bring new ideas and cultures;
6. Immigrants undermine the culture;
7. Illegal immigrants should be excluded;
8. Legal immigrants should have equal access to education.

Each of the items were evaluated through a 5-point Likert scale, where one refers to “Agree strongly” and five to “Disagree strongly”. Items three, four, five, and eight were recoded reversely in order to obtain that the higher scores express a positive attitude towards immigrants.

4. Methodology

4.1. Fuzzy-Hybrid TOPSIS Approach

In this study, a hybrid method based on a fuzzy approach and technique of similarity to ideal solution (TOPSIS) is used to measure the citizens’ attitudes toward immigrants. This approach has had a growing interest in many fields, such as the hotel industry [27], education [8], green energy [28], logistics [29], social sciences [30], agriculture [31], and healthcare [31].

The vagueness associated with subjective assessments is a problem when researchers look for a way to synthesize information for the sake of applying econometric or mathematical models. Fuzzy logic models are an appropriate tool for partially solving such vagueness, which is related with linguistic terms [32,33]. These models handle ambiguous information by deconstructing the concept of objective information to a degree of different strengths. The degree of intensity is conceptualized by a membership function, also called characteristic functions, discriminant functions, or indicator functions [34].

Let X be a set of real numbers (\mathbb{R}), that is, $X = \{x_1, x_2, \dots, x_n\} \in \mathbb{R}$; a fuzzy set $\tilde{A} = \{(x, \mu_A(x)) | x \in X\}$ in X is a set of ordered pairs, where $\mu_A(x)$ is a membership function; and $\mu_A(x) : X \rightarrow [0, 1]$. Thus, the membership function $\mu_A(x)$ is used as a proxy for the relative truth that exists in the statements $x \in A$ [35,36]. The set X is known as the universe of discourse of the fuzzy set theory and emerged as a generalization of the classical set theory.

Fuzzy TOPSIS consists of 6 consecutive steps. First, the ISSP’s answers will be converted into Triangular Fuzzy Numbers (TFNs). As in Salih et al. [37], it has been considered that TFNs are valid tools to deal with the vagueness and uncertainty of information.

Thus, a triplet (a_1, a_2, a_3) of real numbers is considered to assign each scale point to a TFN, as follows:

$$\mu_A(x) = \begin{cases} \frac{x-a_1}{a_2-a_1} & a_1 \leq x \leq a_2 \\ \frac{x-a_3}{a_2-a_3} & a_2 \leq x \leq a_3 \\ 0 & otherwise \end{cases} \tag{1}$$

The information provided by the scale will be converted into TFNs in a universe of discourse within the interval $[0, 100]$. In order to perform no-loss generalization and clarity information, 5 intervals were chosen to represent the original 5-scale points: (1) Disagree strongly (0, 0, 30); (2) Disagree (20, 30, 40); (3) Neither agree nor disagree (30, 50, 70); (4) Agree (60, 70, 80); and (5) Agree strongly (70, 100, 100). For each country and for each region, the information has been aggregated through the Fuzzy Set Logic Algebra, and the average fuzzy number is given by:

$$\tilde{A} = (a_1, a_2, a_3) = \left(\frac{1}{n}\right) \otimes (\tilde{A}_1 \oplus \tilde{A}_2 \oplus \dots \oplus \tilde{A}_n) = \left(\frac{\sum_{i=1}^n a_1^{(i)}}{n}, \frac{\sum_{i=1}^n a_2^{(i)}}{n}, \frac{\sum_{i=1}^n a_3^{(i)}}{n}\right) \tag{2}$$

where \otimes stand for the multiplication of a scalar and a TFN, \oplus the internal addition of TFNs [38]. Thus, we obtain a matrix of TFNs of each analysed group, which contains a lot of information that is difficult to analyse. Therefore, in agreement with Kumar [27], the matrix is defuzzified into a matrix of real and clear information since the uncertainty and vagueness of the information have been adequately managed. Crisp values are then obtained through the weighted average of the 3-tuple calculated as follows:

$$V_{\tilde{A}} = \frac{(a_1 + 2a_2 + a_3)}{4} \tag{3}$$

4.2. TOPSIS Steps

Once the matrix of crisp values has been obtained, the following steps concern the calculation of the TOPSIS index, which measures attitudes towards immigrants (ATI). Following Hwang and Yoon [39], the ideal positive and negative solutions are calculated as follows:

$$\begin{aligned} A_j^+ &= \{(\max V_{ij}), j = 1, 2, \dots, J\}, \quad i = 1, 2, \dots, m \\ A_j^- &= \{(\min V_{ij}), j = 1, 2, \dots, J\}, \quad i = 1, 2, \dots, m \end{aligned} \quad (4)$$

where $i = 1$ to m (groups), $j = 1$ to J (criteria), and V_{ij} are crisp values. Therefore, the positive ideal solution indicates the maximum value of the observations indicated by the sample, while the negative ideal solution is the minimum value. All criteria are considered as benefit criteria, as higher values represent more positive values of ATI [40].

The next step is the measurement of the distance of each group with the ideal solutions. To this end, the Euclidean distance between each observation group and the ideal solutions are computed as follows:

$$\begin{aligned} S_i^+ &= \sqrt{\sum_{j=1}^J (A_j^+ - V_{ij})^2} \\ S_i^- &= \sqrt{\sum_{j=1}^J (A_j^- - V_{ij})^2} \end{aligned} \quad (5)$$

The ATI indicator, which measures the attitudes of citizens towards immigrants, is given by the ratio of the negative Euclidean distance and the sum of the positive and negative Euclidean distances. Mathematically, this ratio is given by:

$$ATI_i = \frac{S_i^-}{S_i^+ + S_i^-} \rightarrow [0, 1] \quad (6)$$

The group observation is more open toward immigrants when ATI is closer to one. Therefore, the groups are classified using the values obtained from the indicator, in descending order, to find which population group has the most positive attitudes towards immigrants. The ATI indicator logic is clear: the higher the indicator is, the closer it is to the positive ideal solution and the further away from the negative one [41].

Finally, the elasticity of the index for each group j concerning each of the eight criteria i included in ATI is calculated. These values measure the sensitivity of ATI for each of the groups studied to each variation of each criterion. Elasticity, therefore, provides a measure of how each criterion shapes the indicator. Mathematically, elasticities are given by:

$$\eta_{ij} = \frac{\Delta\%ATI_j}{\Delta\%V_{ij}} \quad (7)$$

5. Results

In this section, we detail the results provided by the Fuzzy Hybrid approach. First, the groups that represent the positive ideal solution and the negative ideal solution will be described. Then, the ATI at the country level will be detailed. Finally, the section ends by showing the ATI at the regional level, with a particular focus on comparing the differences between capital regions and island territories.

5.1. Attitudes toward Immigrants

The aforementioned methodology was applied to ISSP data for the categories described in Table 1 and at the territorial level (NUTS2 and NUT3) for the six countries considered. The positive and negative ideal solutions, respectively, indicate the groups with the maximum and minimum crisp values for each ISSP indicator. This means that

each group that represents the positive ideal solutions shows the maximum defuzzified value. The contrary happens for groups that are in the negative ideal solutions.

Table 2 shows the results of the ideal solutions for each indicator included in the ATI latent variable. Generally, both for positive and negative ideal solutions, the ideal solutions are represented by territories and political orientations. Residents of the French district of Calvados represent those who do not associate immigration with the crime rate, whereas far-right citizens idealize that the immigrant increases the criminal threat. The inhabitants of the French Occitan province of Gers do not perceive the immigrant as a threat to their job, while in the province of Correze, the immigrant is perceived as a threat to the labour market. The Spanish community of Navarre represents the group of those who support the equality of rights between natives and immigrants. At the same time, the French of Lot prefer that immigrants have fewer rights than natives. In the province of Hautes-Pyrenees, the immigrant is considered a benefit to the economy, while far-right citizens associate immigration with an economic downfall.

Table 2. Ideal solutions.

Indicator	PIS *	Group	NIS **	Group
Immigrants increase crime rates	66.61	Calvados	21.49	Far right
Immigrants take jobs away from people born in [Country]	75.63	Gers	25.71	Correze
Legal immigrants should have same rights	85.17	Navarra	19.64	Lot
Immigrants are generally good for economy	70.00	Hautes-Pyrenees	27.32	Far right
Immigrants bring new ideas and cultures	71.36	Orthodox	28.05	Far right
Immigrants undermine culture	73.75	Tarn-et-Garonne	24.76	Far right
Illegal immigrants should be excluded	55.63	Ariege	7.50	Ardennes
Legal immigrants should have equal access to education	92.50	Ardennes	50.00	Lozere

* positive ideal solution; ** negative ideal solution.

Furthermore, citizens who vote for right-wing parties support the idea that immigrants do not bring ideas and undermine the culture of the country, unlike the Orthodox and the residents of Tarn-et-Garonne. Residents of the northern French province of Ardennes represent those who prefer legal immigration and are opposed to illegal immigration. They prefer legal immigrants having access to education as much as natives, but they would like to expel illegal immigrants. On the contrary, the French from Ariege are more open to illegal immigrants, and those from Lozere are not in favour of educational equality between natives and immigrants.

Once the ideal solutions have been obtained, the distances between the groups of observations and the ideal solutions are measured. Thus, ATI for each group has been calculated (Table 3). At the country level, the results show that the Iberian Peninsula shows more positive attitudes towards immigrants than the other countries in the group under analysis. On the contrary, the UK and Belgium show negative attitudes towards immigrants. France and Germany represent both the intermediate ATI.

At a subsequent step, the ATI for some socio-economic characteristics have been measured. The results show that citizens with more positive attitudes toward immigrants are foreign ones, whereas natives are less open toward immigrants. Those who prefer newcomers to adapt to the traditions of the country show negative ATI values. Instead, the citizens who support the power of the European Union are more open to immigrants. Religion is a determinant of the attitudes toward immigrants too. Muslims and Orthodox show a more positive ATI, whereas Christian religions show low values of attitudes towards immigrants. Levels of education, employment status, age, and political orientation are also decisive in being associated with attitudes towards immigrants. Those with a master's or doctorate, in student status, younger age groups, and far-left voters show a more positive attitude. On the other hand, individuals with primary or lower educational levels, retirees or the disabled, older age groups, and citizens of a conservative or far-right political orientation are less open toward immigrants. Finally, the results are less conclusive with

respect to other variables, such as country pride, gender, work status, attendance at religious events, and income.

Table 3. Attitudes toward immigrants.

Group	ATI	Group	ATI	Group	ATI
Country		Religion		Age	
Spain	0.65	Islamic	0.84	25–34 years	0.60
Portugal	0.60	Orthodox	0.80	24 years or under	0.60
Germany	0.59	Other religion	0.64	35–44 years	0.59
France	0.52	Jewish	0.60	45–54 years	0.54
Belgium	0.46	No religion	0.56	55–64 years	0.51
Great Britain	0.39	Protestant	0.52	65–74 years	0.46
Traditions		Catholic	0.51	75 years or over	0.42
Maintain	0.73	Other Christian	0.40	Assiduousness	
Adapt	0.46	Education		Frequently	0.59
Proud		Upper-level tertiary	0.71	Occasionally	0.52
Somewhat proud	0.54	Lower-level tertiary	0.60	Never	0.52
Not very proud	0.53	Upper secondary	0.55	Income	
Not proud at all	0.51	Post-secondary	0.50	Income7	0.58
Very proud	0.46	Primary school	0.48	Income4	0.56
Citizenship		Lower secondary	0.43	Income9	0.56
Native	0.80	No formal education	0.43	Income8	0.56
Foreigner	0.52	Work status		Income5	0.55
Ancestors		Currently in paid work	0.56	Income6	0.55
Neither parent	0.78	Never had paid work	0.56	Highest	0.53
Only father	0.59	Currently not in paid work	0.49	Income2	0.52
Only mother	0.56	Main status		Income3	0.52
Both were citizens	0.50	In education	0.67	Lowest	0.49
EU power		Other	0.66	Political orientation	
More	0.62	Unemployed	0.59	Far left	0.71
Much more	0.62	Apprentice or trainee	0.57	Left. centre left	0.63
As much	0.59	In paid work	0.56	Liberal	0.51
Less	0.47	Domestic work	0.51	Other	0.49
Much less	0.34	Retired	0.44	Right. conservative	0.41
Gender		Permanently sick or disabled	0.42	Far right	0.11
Female	0.54				
Male	0.53				

5.2. Differences across Territories

Table 4 shows the results of the ATI at the regional and provincial levels (NUTS2 and NUTS3) of the countries analysed. The results are sorted in descending order to rank the ATI at the regional level. Thus, the regions or provinces in the first positions of the first column on the left of the table are the areas with the most positive attitudes towards immigrants. Meanwhile, the territories with more negative attitudes toward immigrants are in the last positions of the last column on the right.

Table 4. Regional ATI.

Region		ATI	Region		ATI	Region		ATI
Islas Baleares	ES	0.81	Finistere	FR	0.56	Liege	BE	0.43
Hautes-Pyrenees	FR	0.74	Castilla-La Mancha	ES	0.56	Pas-de-Calais	FR	0.43
Navarra	ES	0.74	Maine-et-Loire	FR	0.56	Aisne	FR	0.43
Berlin-Ost	DE	0.73	Extremadura	ES	0.56	Scotland (GB)	GB	0.43
Ville de Paris	FR	0.72	Belfort	FR	0.55	Var	FR	0.43
Hautes-Alpes	FR	0.71	Rheinland-Pfalz	DE	0.55	Sarthe	FR	0.43
Berlin-West	DE	0.70	Sachsen-Anhalt	DE	0.55	Flemish Brabant	BE	0.43
Hauts-de-Seine	FR	0.70	Schleswig-Holstein	DE	0.55	Limburg	BE	0.43
Cataluña	ES	0.70	Bremen	DE	0.55	Luxemburg	BE	0.43
Madrid	ES	0.70	Gironde	FR	0.55	Loiret	FR	0.42
Hamburg	DE	0.69	Indre-et-Loire	FR	0.55	Deux-Sevres	FR	0.42
Gers	FR	0.69	Oise	FR	0.55	Brabant Walloon	BE	0.42
Creuse	FR	0.69	Haute-Garonne	FR	0.54	West, East Midlands (GB)	GB	0.42
Murcia	ES	0.68	Ain	FR	0.54	Cher	FR	0.41
Pais Vasco	ES	0.68	Algarve	PT	0.54	Vosges	FR	0.41
Cotes-d'Armor	FR	0.68	Indre	FR	0.53	Dordogne	FR	0.40
Alpes-Hte	FR	0.68	Brandenburg	DE	0.53	Jura	FR	0.40
Lisbon	PT	0.68	Seine-et-Marne	FR	0.53	Drome	FR	0.40
Cantabria	ES	0.67	Aube	FR	0.52	Aude	FR	0.40
Saarland	DE	0.66	Morbihan	FR	0.52	Nord	FR	0.40
Ariege	FR	0.66	Puy-de-Dome	FR	0.52	Antwerp	BE	0.39
Calvados	FR	0.65	Alpes-Maritimes	FR	0.52	East Anglia, South-West, South-East (GB)	GB	0.39
Galicia	ES	0.65	Seine-Maritime	FR	0.51	Charente-Maritime	FR	0.38
Brussels Capital	BE	0.65	Valenciana	ES	0.51	East Flanders	BE	0.38
Aragón	ES	0.65	Eure	FR	0.51	Hainaut	BE	0.37
Andalucía	ES	0.64	Bas-Rhin	FR	0.51	Vaucluse	FR	0.36
Hessen	DE	0.64	Savoie	FR	0.51	Cote-d'Or	FR	0.36
La Rioja	ES	0.64	Meuse	FR	0.51	Orne	FR	0.36
Val-de-Marne	FR	0.64	Mecklenburg-Vorpommern	DE	0.50	North, North-West, Yorkshire, Humbershire (GB)	GB	0.34
Tarn-et-Garonne	FR	0.64	Allier	FR	0.50	Loir-et-Cher	FR	0.34
Asturias	ES	0.64	Greater London (GB)	GB	0.50	Lozere	FR	0.33
Niedersachsen	DE	0.63	Gard	FR	0.50	Vienne	FR	0.33
Nordrhein-Westfalen	DE	0.62	Sachsen	DE	0.50	West Flanders	BE	0.33
Bayern	DE	0.62	Doubs	FR	0.49	Moselle	FR	0.30
Haute-Loire	FR	0.62	Charente	FR	0.49	Ardennes	FR	0.29
Herault	FR	0.61	Loire-Atlantique	FR	0.49	Wales (GB)	GB	0.27
Val-d'Oise	FR	0.61	Vendee	FR	0.48	Lot	FR	0.25
Tarn	FR	0.60	Bouche-du-Rhone	FR	0.48	Eure-et-Loire	FR	0.24
Yvelines	FR	0.60	Ardeche	FR	0.48	Correze	FR	0.23
Castilla-León	ES	0.60	Marne	FR	0.48	Cantal	FR	0.20
Seine-Saint-Denis	FR	0.60	Haute-Vienne	FR	0.48	Corse	FR	0.19
Nievre	FR	0.59	Mayenne	FR	0.48			
Islas Canarias	ES	0.59	Namur	BE	0.48			
Alentejo	PT	0.59	Meurthe-et-Moselle	FR	0.47			
Isere	FR	0.59	Haute-Marne	FR	0.47			
Baden-Wuerttemberg	DE	0.58	Ille-et-Vilaine	FR	0.47			
Haute-Saone	FR	0.58	Yonne	FR	0.47			
Haute-Savoie	FR	0.57	Pyrenees-Orientales	FR	0.46			
Essone	FR	0.57	Aveyron	FR	0.46			
Pyrenees-Atlantiques	FR	0.57	Manche	FR	0.46			
North	PT	0.57	Somme	FR	0.45			
Thuringen	DE	0.57	Haut-Rhin	FR	0.45			
Loire	FR	0.57	Lot-et-Garonne	FR	0.45			
Rhone	FR	0.56	Landes	FR	0.44			
Centre	PT	0.56	Saone-et-Loire	FR	0.44			

Own elaboration. DE: Germany; ES: Spain; FR: France; PT: Portugal; GB: United Kingdom; BE: Belgium.

At the regional level, the Spanish territories are located in the first part of Table 4, that is, among those with the most positive attitude. The Balearic Islands and the community of Navarre are the first two regions in the ATI ranking of all the regions and provinces considered in this study. There are also the Catalans, Madrid, Murcia, and the Basque

country among the most open to immigrants. Therefore, the regions with a strong regional identity feeling have the highest ATI values. Even if the Spanish regions are all in the first half of the ATI ranking, the Valencian community is the region with the worst value of attitudes towards immigrants compared to other compatriots.

Although Portugal has high ATI values at the country level, the Portuguese territories are not present in the top positions of the ATI ranking at NUTS2 and NUTS3 levels. The French provinces are the most heterogeneous ones. The territories most open to immigrants are the southwestern French provinces and the territories close to Paris. Citizens residing in Hautes-Pyrenees, Hautes-Alpes, Hauts-de-Seine, and Creuse are the French with a better perception of immigrants. At the same time, the central and northern provinces, Eure-et-Loire, Correze, and Cantal, show a more negative attitude towards immigrants. Despite this, no reference patron divides the territories among France, even if the results reveal that the territories with regionalist movements, such as Brittany and the French area of the Basque country, present more positive attitudes toward immigrants.

German regions are divided into two macro areas: the former East Germany and the former West Germany. It is evident from the results that the formerly socialist territories are more hostile to immigrants than the former Federal Republic of Germany. The results show that the most economically advanced regions report the most positive ATI values, such as Hessen, Saarland, and Hamburg. The regions adverse to immigration are the eastern regions of Brandenburg, Sachsen, and Mecklenburg.

The results show that the Belgian and British regions have the lowest ATI values. The Belgian case shows that the western Flamenco region (West-Vlaanderen) is the territory with the lowest ATI value in Belgium. All the other Belgian regions are hostile towards immigrants, except for the Namur region and the capital region. Even more hostile are the British towards immigrants. The northern regions of England and Wales have the worst indicators of attitudes toward immigrants in the UK. The only region with slightly more positive attitudes toward immigrants is the capital region of London.

Furthermore, Table 4 also focuses on the capital regions of our six countries under analysis. The results have been summarised in Table 5 to study the capital effect more easily. In this context, it is evident that there could be a capital effect between the regions analysed, as their ATI indicator is always above the respective national average. The value of Berlin's attitude towards immigrants is at least 11 points above the German ATI (11 for West Berlin and 14 for East Berlin). The seat of the French government, Paris, has an ATI of 0.72, even 20 points higher than the national ATI. Madrid's Spanish capital has an ATI value of 0.70, only two points above the national average, while Lisbon is eight points above the ATI Portuguese average. Brussels is much more open to immigrants than other Belgian regions, with ATI values of 0.65, 21 points above the ATI of Belgium. The last capital in the order of ATI is London, the capital region most hostile to immigrants. Thus, it is in line with the rest of the country, although compared to the British average, it ranks 11 points above.

Table 5. ATI Capital regions.

Group	Country	ATI	Country ATI
Berlin-East	DE	0.73	0.59
Ville de Paris	FR	0.72	0.52
Berlin-West	DE	0.70	0.59
Madrid	ES	0.70	0.65
Lisbon	PT	0.68	0.60
Brussels	BE	0.65	0.46
Greater London	GB	0.50	0.39

Own elaboration. DE: Germany; ES: Spain; FR: France; PT: Portugal; GB: United King-dom; BE: Belgium.

We now want to provide a comparison between island regions and continental regions. Regarding island regions, Table 6 summarises the values of the attitudes towards immigrants from the Balearic Islands, the Canary Islands, and Corsica. The regions have been sorted in order of ATI values. Regional data on the number of immigrants in the

regions were extracted from the respective national statistical institutes (Spain: INE; France: INSEE) to provide a broader overview of ATI in insular territories. The Balearic Islands are the island region with both the highest indicators, and it has a high immigration rate (20%) and the best ATI value of all regions. The Canary Islands have more moderate openness towards immigrants and an immigration rate of 14%. The results highlight a dual behaviour between the Balearic Islands and Corsica. These two island regions exhibit an opposite behaviour, as Corsica has the lowest immigration rate and a high hostility towards immigrants.

Table 6. ATI and immigration rate in Corsica, Balearic, and Canary Islands.

Group	Country	ATI	Immigration
Balearic Islands	ES	0.81	221.406 (20%) *
Canary Islands	ES	0.59	301.234 (14%) *
Corsica	FR	0.19	32.661 (10.2%) **

* INE; ** INSEE. ES: Spain; FR: France.

Finally, the elasticities of ATI by Islands regions and capital regions were calculated (Table 7). The elasticity analysis was studied because it provides interesting insights into the criteria that affect more ATI in each territory. In this study, the elasticities for each item of the capital and island regions were calculated. The ATI of the Balearic Islands is quite inelastic to all criteria, even if the criteria concerning equality of rights and access to education between natives and immigrants have a more significant impact than other criteria. The same behaviour is repeated in the Canary Islands, but the criterion concerning the equality of rights has the most significant impact. The competition in the labour market, the perception of the economic threat of immigrants, and the equal access to education between natives and immigrants are criteria that have a significant impact on the Corsican ATI, and, interestingly, these three values are part of the five most elastic values that are analysed. The ATI is inelastic concerning all attributes as far as the capital regions are concerned. The criterion with the highest elasticity is the same rights between natives and immigrants, especially for Berlin-West and Paris.

Table 7. Elasticities.

	C1	C2	C3	C4	C5	C6	C7	C8
Balearic Islands	0.0972	0.2744	0.3137	0.1479	0.1094	0.1236	0.0577	0.3037
Canary Islands	0.1752	0.2106	0.3267	0.1803	0.1876	0.2151	0.1197	0.2497
Corse	0.1305	0.9151	0.2598	0.5688	0.0851	0.1015	0.0554	1.0876
Brussels	0.1822	0.2259	0.3285	0.1810	0.1910	0.2165	0.1487	0.2600
Berlin-E	0.1820	0.1952	0.3306	0.1347	0.0818	0.1803	0.0876	0.2719
Berlin-W	0.1798	0.2151	0.3311	0.1562	0.1389	0.1657	0.1149	0.2454
Madrid	0.1406	0.2408	0.2407	0.1478	0.1731	0.1645	0.1423	0.2393
Paris	0.1656	0.1623	0.3382	0.1525	0.1749	0.1407	0.1422	0.2180
London	0.2231	0.2247	0.2878	0.2396	0.2506	0.2503	0.1301	0.2645
Lisbon	0.1654	0.2347	0.2937	0.1427	0.1542	0.1811	0.1329	0.2513

C1: Immigrants increase crime rates; C2: Immigrants take jobs away from people born in [Country] C3: Legal immigrants should have the same rights C4: Immigrants are generally good for economy; C5: Immigrants bring new ideas and cultures C6: Immigrants undermine the culture; C7: Illegal immigrants should be excluded; C8: Legal immigrants should have equal access to education.

The five most inelastic pairs also show that three are observed in insular territories (Corse and Balearic Islands) and two in Berlin-East. The criteria involved were those of bringing new ideas and cultures, and illegal immigrants should be excluded.

6. Discussion

Now, the results presented above will be discussed highlighting that the more open citizens toward immigrants depend on some socioeconomic characteristics. This section

explains which individual characteristics can have a positive or negative influence on ATI. Thus, an overview of why some regions are more or less open toward immigrants than others will be further discussed.

6.1. Pro-Immigrants Profiles

Previous studies have analysed the attitudes of citizens towards immigrants by country, religion, age, income, and education [1,3,5,11,13,18,42]. The socio-economic characteristics of individuals are seen as proxies of factors that affect anti-immigrant sentiments.

The study introduced a methodology not commonly used in the social sciences. The Fuzzy-Hybrid TOPSIS approach was recently introduced in attitudes toward immigrants by Martín and Indelicato [1]. The methodology is effective, as the results replicate other studies [18,26,43,44].

The analysis of the positive and negative ideal solutions shows that the maximum and minimum values expressed for each criterion are mainly represented by French territories and the political orientation of the extreme right. In particular, the criteria concerning the crime rate, the economy, and culture are negatively represented by the political orientation of the far right. In agreement with Creighton et al. [45], financial and economic crises, such as in the first decade of the 2000s, immediately impacted anti-immigrant sentiment. Especially among far-right citizens, the perception of economic and country safety threats arises when immigration increases [46,47].

At the country level, three areas of attitudes towards immigrants have been detected. The Iberian Peninsula is the most open territory towards immigrants; civic nationalist countries, France and Germany, present moderate attitudes towards immigrants; and, finally, the UK and Belgium represent the group of countries with anti-immigrant sentiments. Following McLaren and Johnson's [48] work, what worries the British citizens is the impact of immigration on society. In this regard, the key factors requiring specific attention are the economy, crime, and symbols of British identity. Brits are concerned that immigration threatens the jobs of their compatriots, which in turn affects how attitudes towards immigrants are shaped. Furthermore, the British are concerned about the symbolic and cultural threats arising from mass immigration, such as perceived religious threats to emphasise non-British values and end communities outside the UK and threats to shared customs and lifestyles [48,49].

Religion is an essential determinant of anti-immigrant attitudes. The results show that citizens who profess minority religions in the countries analysed show more positive attitudes towards immigrants. For example, Muslims are the ones most in favour of immigration. This issue can be explained because Muslims are the ethnic minority and the largest share of immigrants to European countries. According to Marfouk [50], anti-immigrant sentiment is a more Islamophobic sentiment. Therefore, it is easy to think that Muslims show more positive attitudes toward immigration as solidarity.

On the contrary, Catholics display negative attitudes towards immigrants. According to Kerwin and Alulema [51], many Catholics do not align with Christian teachings, as they have negative feelings and attitudes towards immigrants. Following Ambrosini's [52] work, the charitable activities of Catholics do not include activities toward immigrants because according to the priorities of many Catholics, the protection of migrants and refugees is a secondary or lower priority [51].

6.2. Capital Regions and Islands

Attitudes towards immigrants at the territorial level have been summarised in Figure 1. The first result that the study confirms is the capital effect of the six countries, which can be explained by the fact that European capitals are multicultural societies. The literature shows that multiculturalism tends to have beneficial effects on immigrant attitudes, but it can also be a detonator against immigration [53,54]. According to Mahfud et al. [55], multiculturalism is related to more positive attitudes towards immigration. They have shown that in the condition of multiculturalism, citizens perceive low feelings of threat

and, therefore, less prejudice. Research among majority group members has shown that multiculturalism can promote positive relationships between groups, evoke resistance, and hinder harmony between groups [55]. This last result is supported by the findings of the British regions, as multiculturalism has resulted in an increased perception of the threat to Britain [48].

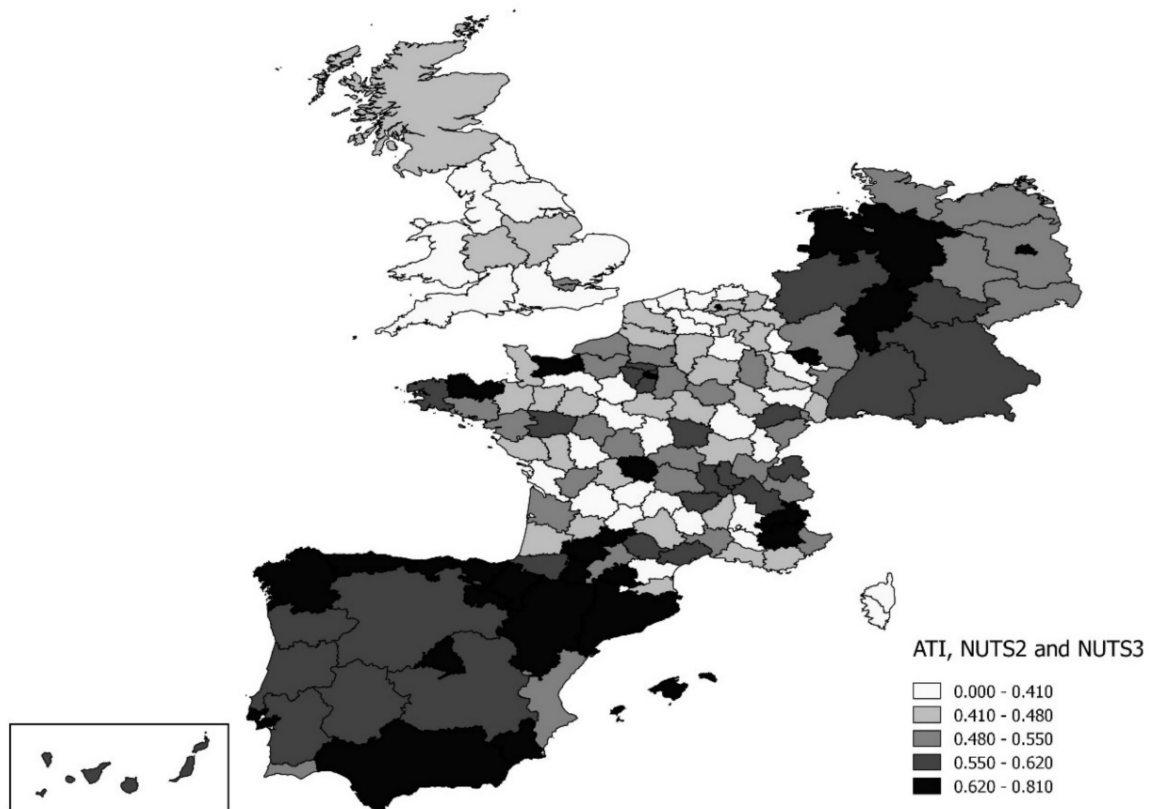


Figure 1. ATI at the territorial level—our own elaboration.

This study obtains significant results at the island region level. There is a perfect duality between Corsica and the Balearic Islands, as the French island shows negative attitudes towards immigrants and the Balearics are more open to immigrants. One explanation may be the difference in the level of multiculturalism between the two regions, as the immigrant population in the Balearic Islands is 20%, while in Corsica, immigrants do not exceed 10%. In addition, it can be explained through the nexus between immigration and tourism [24,56,57].

Provenzano [24] shows that the tourist flow between the two countries is affected by the migration rate and vice versa. His findings suggest a positive relationship between tourism and immigration. In other words, the greater the number of migrants from one country to another, the greater the flow of tourists from the first country to the second. Therefore, the duality between the Balearic Islands and Corsica can be dictated by the differences in tourism policies. Provenzano [24] shows that the islands are characterized by a tourism development model that has favoured the construction of large hotels with a high average number of beds per structure, thus creating important and prominent tourist destinations. According to Capó et al. [56] and Ruggieri and Cal [57], the Balearic Islands is an archipelago that invests more in tourism, creating infrastructures and promoting tourist activity, while Corsica is an island region with the lowest levels of tourism. Thus, the differences between the Balearic Islands and Corsica can be explained by the fact that high levels of tourism cause high rates of immigration [24]. Thus, high levels of immigration build multicultural societies, which are societies that show more positive attitudes towards immigrants [55].

7. Conclusions

Attitudes towards immigrants (ATI) is a very studied topic at the academic level [3–5]. The issue of immigration is still a very hot topic in political and social debate. Researchers studying the ATI commonly use Confirmatory Factor Analysis (CFA) and Structural Equation Models (SEM), which have proven to be valid methodologies that are confirmed as efficient tools [11,26,42]. Despite this, the research does not seem to advance on a methodological level.

The study aimed to introduce a new methodology in this field of studies, namely the Fuzzy-Hybrid TOPSIS, which is not commonly used in the social sciences. The advantage of this approach is that it deals with the vague information provided by the Likert scale commonly used in social science questionnaires. The 2013 ISSP data from the National Identity form were extracted. Eight items were chosen to measure attitudes towards immigrants (ATI), such as Immigrants increase crime rates; Immigrants take jobs away from people born in [Country]; Legal immigrants should have the same rights; Immigrants are generally good for the economy; Immigrants bring new ideas and cultures; Immigrants undermine culture; Illegal immigrants should be excluded; and Legal immigrants should have equal access to education. The analysis was carried out at the country and territorial levels (NUTS2 and NUTS3).

The results confirm previous studies in the literature, giving an innovative approach by applying the methodology based on the fuzzy set theory. At the country level, the countries showing the highest ATI values are the countries of the Iberian Peninsula and Germany. At the same time, the United Kingdom and Belgium represent the group of countries with negative attitudes towards immigrants. At the territorial level, a capital effect is highlighted, as the capitals of the countries analysed tend to have more positive ATI than the average of the respective country. Finally, a duality between the Balearic Islands and Corsica has been pointed out. The Spanish archipelago, driven by the nexus between tourist and migratory flows [24], has built a multicultural society tolerant of immigrants [55], while Corsica, which has invested less in tourism, presents more hostile attitudes.

As with any other study, future research is needed to overcome some limitations such as: (1) a small number of countries were chosen; (2) only 2013 was considered; and (3) the analysis was carried out at an aggregate level, although the methodology allows the study at an individual level. Future research should first aim to introduce new ISSP versions after those of 2013 in the analysis providing more insights into the dynamic of ATI. Furthermore, second, it would be interesting to provide a more complete overview of Europe, introducing countries such as Italy, Austria, and other Eastern European countries. Thus, it will be possible to obtain interesting insights with respect to whether the territorial differences obtained in the study are more or less reinforced using a wide sample of countries between the North, West, East, and South of Europe. In addition, other econometrics models could be used to detect if some socioeconomic variables are important drivers or not on ATI formation.

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