



Research article

A comparison of attitudes towards immigrants from the perspective of the political party vote

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ABSTRACT

Many reasons have shaped immigration into the EU over the past decade. Since then, attitudes towards immigration have not only gained public attention but have also shaped political debate and discourse in recent regional, national, and EU elections. The global financial crisis of 2008 increased the importance of migration in the social welfare upheaval in most Member States. Anti-immigrant sentiment and rhetoric became part of the narrative of some political parties during the campaign, and media coverage catalysed these social attitudes. The study used the 2013 International Social Survey Project (ISSP) dataset of six countries (namely Belgium, Germany, Spain, France, the UK, and Portugal) to see if the political party vote might have affected the attitude toward immigrants. The study extends other previous studies and presents new evidence on an under-researched topic. Results show that the left party voters are more open toward immigrants than the right party voters and that the green party voters show the most positive attitudes towards immigrants.

1. Introduction

The results of recent elections have seen the emergence of nationalist parties that propose anti-immigrant policies [1]. The exploits of far-right movements are a consequence of the increase in anti-immigrant sentiment, mainly caused by the economic and cultural threat that immigrants imposed on some vulnerable citizens [1,2]. In the European political climate, anti-immigration issues have become key factors in election campaigns [3]. Hewlett [2] affirms that Marine Le Pen and her far-right national political party waged consensus around three themes, namely national identity, law and order, and immigration.

Different methods such as confirmatory factor analysis (CFA) and structural equation models (SEM) have been used to measure the attitudes toward immigrants [4–7]. These methods are well known and applied in the field and they mainly study the latent variables or constructs using different sets of indicators or items [7,8]. More recently, Martín and Indelicato [9] proposed a different approach based on a fuzzy-hybrid TOPSIS method to analyze the phenomenon using six indicators as the primary inputs to calculate an index measuring the openness towards immigrants, which was based on items that proxied the ethnicity, economic, cultural and religious threats. With this regard, this paper complements other studies [1,10,11], using a new quantitative approach based on fuzzy logic. The next section provides an overview of the literature on different attitudes towards immigrants and political parties. Section 3 describes

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the data, and Section 4 provides an overview of the methodology adopted. Sections 5 and 6 presents the findings and discussion, whereas Section 7 concludes.

1.1. Attitudes toward immigrants and political parties

In recent years, migratory waves have intensified on both European and global scene [12]. Immigration is a natural phenomenon that always shakes the global demographic balance, especially in overdeveloped societies [13,14]. Thus, moments of intense immigration events push a reshaping of citizens' attitudes towards immigrants [4].

Attitudes towards immigrants has been a well-studied topic by various researchers [4,12,15–19]. Anti-immigrant sentiment has been studied from different perspectives: at the country level [20,21], according to religion [22], income [23], according to state legitimacy [24], or political orientation [25]. [20] has shown that Europe is divided mainly into two macro-areas, where the most open countries to immigrants are those of Central and Northern Europe, whereas the countries most hostile to migration are in the Eastern Europe. According to Sherkat et al. [22], religion is a determining factor in shaping attitudes toward immigrants. They identify religious groups of Catholics and other Christians as those that tend to have an Islamophobic sentiment.

Immigration is also considered an important issue that explains in part the results of the political elections [10]. The authors analyze the relationship between the migratory waves between 1996 and 2011 in Spain and the results of the presidential elections. They conclude that the increase in Latin immigration, with which they share the language, had increased the turnout for the left party, while that at times when immigration was predominantly from African countries support shifted to right-wing parties. Thus, they conclude that the attitudes of Spanish people towards immigrants are not moved by economic factors, but rather by ethnic and cultural factors.

Various studies affirm that the issue of immigration is relevant to the political agendas of most political parties [1,6,25–27]. According to Alonso and da Fonseca [26], the immigration political agenda has changed from the early nineties until today. As long as the left and right have not polarized the immigration issue, there is no increase in far-right anti-immigration parties. It happened, for example, in the Netherlands, when the left, together with the Greens, changed their political agenda in a proposal of greater openness toward immigrants. Therefore, far-right parties have reached the discontent of citizens concerned about the economic and cultural threat [26]. Bohman [25] studied how political parties deal with the issue of immigration influencing citizens' perceptions of immigrants. He showed that increasing the far-right into the political arena helped put immigration issues on the political agenda and gradually changed positions and rhetoric among traditional parties [28,29]. Bohman [25] shows that the choice of traditional parties is important for people's attitudes, noting that both left and right expressions positively affected anti-immigrant attitudes, whereas centre parties did not. Furthermore, when leftist or centrist parties convey ideas that are traditionally associated with the far-right, they reinforce the anti-immigrant attitudes of individuals on the left rather than the right. The expressions of left-wing parties, which traditionally do not raise these issues, also mean that their supporters reconsider their views and become increasingly hostile [25].

Citizens' attitudes towards immigrants tend to be more negative when far-right parties take centre stage in the electoral campaign [1,30]. Dekeyser and Freedman [1] determine that this change is mainly accentuated in elections where anti-immigration sentiment is part of the social and political debate and between individuals political parties. They show that the rise of far-right parties in Europe will continue to negatively influence on attitudes towards immigration, especially during the refugee crisis, which has led to a significant increase in the number of immigrants/refugees arriving in Europe. Furthermore, the crisis also triggered the anti-immigrant rhetoric from far-right parties. Political sentiment of voters as represented by anti-immigrant position of some parties can likely drive the agenda of some integration policies, as shown by Dalle Nogare et al. (2021) for Italian museums and their pro-immigrants initiatives.

Immigration has increasingly become a political issue. Parliamentary debates are animated on the question of whether or not to accept the entry of immigrants. In some situations, as in the case of the Ukrainian refugee situation after February 24, 2022, countries have been welcoming [31], but in other cases, immigration laws have become increasingly strict due to extraordinary events such as the 11 S [32] or political populism [33].

The literature on the attitude towards immigrants shows a trend in the anti-immigrant positions of the political agendas of far-right parties [34–36]. In Spain, the political discourse on immigrants of the far-right party (Vox) is based on the criminalization of immigrants as those who undermine national, cultural, occupational, and women's safety. In Austria, the Austrian People's Party manifests a clear-cut anti-immigrant policy after the change of leadership, and the focus on the question of Muslims and their descendants has been accentuated [35]. The latter show that Islam, Muslim immigrants, and descendants are a key point of the party's programmatic campaign. Support for the asylum issue is waning due to a political agenda against protecting refugees. Similarly, Spies et al. [34] analyze the relationship between the rise in anti-immigrant sentiment in Germany and the political rise of the far-right Alternative for Germany (Afd) party. They point out that the Afd electorate is part of the Russo-German group. The community of Russian descendants expresses attitudes towards immigrants that depend on linguistic, cultural, and economic characteristics.

2. Data

This study uses the National Identity module data from the 2013 wave of the International Social Survey Program. ISSP is a multinational collaborative program that examines a variety of social science topics, which was founded in 1984, and its members cover diverse nations and cultures around the world. Its institutional members, each representing a country, are academic organizations, universities, or investigation institutions [37].

Six countries of Europe were selected. The sample is divided among the countries as follows: Belgium - BE (2202), Germany - DE (2017), France - FR (1717), Portugal - PT (1001), Spain - ES (1225), and the United Kingdom - UK (904). Most interviewees have a secondary or higher education and are mainly employed (49.81%) or retired (27.34%). The most representative groups according to nativity, gender and age are natives (93.69%), women (51.67%), and between 45 and 54 years old (18.94%). 60.15% of respondents prefer newcomers to adapt to the majority traditions of society and are predominantly Catholic (44.58%) or agnostic (31.50%). 47% of the sample participate in religious events, while 36% have never attended them. Most of the sample is represented by married people (51%). Children of both parents with citizenship of the country (85%) and 46% of respondents who are proud of their country. The sample is mainly represented by upper-middle-income earners and a moderate political orientation (Centre-Left 23.90% and Center-Right 21.97%).

The ISSP provides a question on the political party voted by the individuals in the National Identity module. For each country, therefore, the political parties were divided according to their ideology, centre-right (and right), centre-left (and left), and the Green parties (Table 1). Thus, in this work, the attitudes of citizens towards immigrants are going to be analysed according to the last election's political party vote.

The items for calculating the index measuring the attitude towards immigrants (ATI) are based on the answers provided to eight indicators in the ISSP National Identity module. The issues are detailed as follows.

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 culture
7. Illegal immigrants should be excluded
8. Legal immigrants should have equal access to education

Answers are given through a 5-point Likert scale as follows: (1) Strongly agree; (2) Agree; (3) Neither agree nor disagree; (4) Disagree; and (5) Strongly disagree. Indicators 3, 4, 5, and 8 needed reverse coding to ensure that all higher grades point toward having a more open attitude towards immigrants.

2.1. Hybrid fuzzy TOPSIS

2.1.1. Fuzzy Set Theory

Fuzzy Set Theory (FST) has been a valid approach in various fields, such as the study of green energy [38], field of finance [39], supplier selection problems [40] and cybersecurity analysis [41]. The FST has not yet been fully exploited in social sciences, although recently (Martín & Indelicato, 2022) have introduced the Fuzzy approach in the study of citizens' attitudes towards immigrants.

The information provided through the scales adopted in response to the questionnaires is vague. The responses given by individuals

Table 1
Political parties.

CENTRE-RIGHT/RIGHT		CENTRE-LEFT/LEFT		GREEN	
Flemish Interest	BE	Socialist Party Flemish	BE	GROEN	BE
National Flemish Alliance	BE	Socialist Party Francophone	BE	Green Party Flemish	BE
Christian Democrats Flemish	BE	Social Democratic Party	DE	Alliance 90	DE
List Dedecker	BE	The Left	DE	Pirate Party	DE
Christian Democrats	BE	PSOE	ES	Green Party - EELV	FR
Flemish Liberals and Democrats	BE	Spanish Communist	ES	Democratic Unity	PT
MFD	BE	UC y P	ES	Catalonia Greens	ES
Popular Party	BE	Catalonian Republican Left	ES		
CDU/CSU	DE	BNG	ES		
Free Democratic Party	DE	Worker's Struggle	FR		
National Democratic Party	DE	New Anticapitalist Party	FR		
AFD	DE	Left Front	FR		
Freie Wähler	DE	Socialist Party	FR		
Popular Party	ES	Labour	UK		
Canary Islands Coalition Party	ES	Scottish National Party	UK		
Democratic Movement	FR	Plaid Cymru	UK		
Union for a Popular Movement	FR	Left Bloc	PT		
Arise the Republic	FR	Socialist Party	PT		
National front	FR				
Conservative	UK				
Liberal Democrats	UK				
Democratic and Social Centre	PT				
Social Democratic Party	PT				

are shaped by subjective judgments and inaccuracies [42]. FST is an effective approach to handling this type of vague information [43]. Vagueness is a phenomenon that runs through the thought and language of human beings. Vague information is flexible or manipulable by slight changes in the wording of an item of a questionnaire. For each crisp value, there is a relatively fixed and well-defined set of linguistic rules governing its use, whereas vague terms are not given explicit rules. In this contest, the fuzzy approach can transform vague information into crisp values [44].

FST was postulated by Zadeh [45] as the basis of a completely new methodology for studying complex systems and synthesising approaches to their regulation. It is the generalization of the idea of classical logic, which represents the belonging of a variable group of objects in a particular world of discourse in a fuzzy environment using real numbers in an interval [0, 100] [45].

Thus, let A be a fuzzy set in X , $\mu_A(x)$ is the membership function $A : X \rightarrow [0, 1]$ known in a universe of discourse X that belong to the interval [0, 100]. If the value for x is closer to 1, x is belonging to A with a higher intensity [43,46]. Thus, $\mu_A(x)$ is the membership function used to proxy the relative truth into the statements $x \in A$ [45,47]. X is the set of the universe of discourse of the fuzzy set theory, which emerged as a generalization of the classical set theory. Fuzzy numbers are defined as numbers that are close to a given real number [46].

The information given by the ISSP responses is vague and is the result of the respondents' subjectivity. The vagueness of this information is transformed into Triangular Fuzzy Numbers. Salih et al. [48], affirm that TFNs are valid tools to deal with the vagueness and uncertainty of the individuals' information. Thus, each item answer is transformed into a 3-uple (a_1, a_2, a_3) , that provides the membership function of the TFN as follows:

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

In the study, each answer on the Likert scale was assigned to a TFN, with no loss of generality [49,50]. The triplet for each point was selected based on the literature and previous studies [21]. Table 2 shows the TFNs used in the study. The TFN membership function is characterized by having the highest degree of intensity of truth in the midpoint of the triplet used to represent it. Another interesting observation of the table is that the vagueness of the information is adequately managed with fuzzy logic because all consecutive TFNs overlap [51].

The Fuzzy Set Logic Algebra is used to obtain the aggregated TFNs, for any group under analysis. Thus, Fuzzy Set Logic Algebra provides the average fuzzy number as follows:

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

where \otimes stands for the multiplication of a scalar and a TFN, and \oplus is the internal addition of TFNs [52]. Thus, a TFNs matrix of each analysed group is obtained. This matrix contains a lot of information that is difficult to analyze. Thus, following Kumar [53], the matrix will be defuzzified into a matrix of real numbers that now contains crisp numbers or clarified information. Thus, crisp values are the weighted average of the 3-tuple given by:

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

TOPSIS.

The technique for order of preference by similarity to the ideal solution (TOPSIS) is a widely used approach for solving problems in Multi-Criteria Decision Making (MCDM) [54]. TOPSIS is a hybrid approach because it is not applied directly to TFNs but to the defuzzified information matrix [55].

The TOPSIS hybrid method based on the defuzzified information matrix is based on three different steps [21,56,57]. First, the ideal positive and negative solutions are calculated. The positive ideal solution (PIS) is the maximum value of the values for each group and each item. Conversely, the negative ideal solution (NIS) is the minimum value of the defuzzification result for each item and group [58]. Both positive (A_j^+) and negative (A_j^-) ideal solutions are calculated as follows:

Table 2
Five-point Likert scale conversion to TFNs.

Likert-scale	TFN
Strongly Disagree	(0,0,30)
Disagree	(20,30,40)
Neither agree nor disagree	(30,50,70)
Agree	(60,70,80)
Strongly Agree	(70,100,100)

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

where $i = 1$ to m (groups), $j = 1$ to J (criteria), and V_{ij} are crisp values. As in El Alaoui [59], higher values represent a more open citizens' attitudes toward immigrants (ATI), all criteria are considered as benefit criteria. Once the ideal solutions are calculated, the existing Euclidean distance from each group to these ideal solutions is calculated as follows:

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

Thus, the synthetic ATI indicator for the groups can be obtained as:

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

Therefore, each group included in the study will be classified according to ATI, that is, according to whether the group is more or less open to immigrants according to the increasing order of the synthetic indicator. TOPSIS is based on the concept that the best alternatives should be more or less similar to the ideal positive or negative solutions. The ATI synthetic index depends on the items under analysis and, at times, the knowledge of which items are more or less influential for the different groups can be of interest to some social actors, such as the political decision-makers responsible for the political agendas of political parties. Through this approach, we will obtain the elasticity value that measures the sensitivity of the ATI concerning each item and group [21]. Mathematically, the elasticity of ATI for each group i and each item j can be calculated as:

$$\eta_{ij} = \frac{\Delta\%ATI_i}{\Delta\%V_{ij}}
 \tag{7}$$

Table 3
TFNs and crisp clarified values for the total sample.

Group	Item	TFN	Crisp Value	Group	Item	TFN	Crisp Value
Belgium	C1	(28.36, 40.51, 55.75)	41.28	Portugal	C1	(33.23, 46.31, 59.18)	46.26
Belgium	C2	(35.59, 49.28, 63.41)	49.39	Portugal	C2	(29.94, 41.44, 55.12)	41.98
Belgium	C3	(33.92, 46.52, 60.72)	46.92	Portugal	C3	(48.82, 62.75, 73.81)	62.03
Belgium	C4	(32.61, 45.81, 61.17)	46.35	Portugal	C4	(45.56, 59.42, 71.52)	58.98
Belgium	C5	(36.44, 49.57, 64.05)	49.91	Portugal	C5	(46.06, 59.61, 71.81)	59.27
Belgium	C6	(34.76, 48.12, 62.23)	48.31	Portugal	C6	(46.06, 60.66, 71.98)	59.84
Belgium	C7	(19.43, 27.98, 46.57)	30.49	Portugal	C7	(25.68, 36.59, 51.53)	37.60
Belgium	C8	(54.86, 72.39, 81.24)	70.22	Portugal	C8	(58.57, 74.40, 82.91)	72.57
France	C1	(32.75, 46.26, 61.24)	46.63	Spain	C1	(36.21, 50.23, 62.95)	49.91
France	C2	(40.26, 55.72, 68.75)	55.11	Spain	C2	(34.57, 47.55, 61.24)	47.73
France	C3	(32.60, 44.37, 59.59)	45.24	Spain	C3	(57.28, 75.81, 83.53)	73.11
France	C4	(34.53, 47.65, 63.15)	48.24	Spain	C4	(40.11, 54.39, 67.99)	54.22
France	C5	(36.15, 48.95, 64.02)	49.52	Spain	C5	(40.91, 54.60, 67.98)	54.52
France	C6	(38.46, 52.80, 65.96)	52.51	Spain	C6	(45.98, 61.98, 72.63)	60.64
France	C7	(21.35, 30.44, 49.35)	32.90	Spain	C7	(23.40, 32.88, 50.54)	34.93
France	C8	(60.21, 80.46, 86.89)	77.00	Spain	C8	(61.08, 81.50, 87.53)	77.90
Germany	C1	(30.15, 41.94, 57.04)	42.77	United Kingdom	C1	(30.20, 42.55, 57.97)	43.32
Germany	C2	(42.19, 56.62, 69.70)	56.28	United Kingdom	C2	(28.24, 39.71, 55.48)	40.78
Germany	C3	(41.44, 54.17, 66.48)	54.07	United Kingdom	C3	(29.92, 41.48, 56.47)	42.34
Germany	C4	(42.76, 56.26, 69.58)	56.21	United Kingdom	C4	(35.02, 48.51, 63.17)	48.80
Germany	C5	(48.77, 62.40, 73.98)	61.89	United Kingdom	C5	(38.18, 51.55, 65.61)	51.72
Germany	C6	(40.56, 53.99, 66.92)	53.87	United Kingdom	C6	(32.03, 44.64, 59.70)	45.26
Germany	C7	(24.36, 34.22, 51.00)	35.95	United Kingdom	C7	(13.21, 19.50, 40.62)	23.21
Germany	C8	(60.26, 78.14, 85.13)	75.42	United Kingdom	C8	(46.45, 60.06, 72.33)	59.72

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 the economy; C5: Immigrants bring new ideas and cultures; C6: Immigrants undermine culture; C7: Illegal immigrants should be excluded; C8: Legal immigrants should have equal access to education.

3. Results

3.1. The sample representation

Table 3 shows the TFNs and the crisp values of each analysed country, given by Equations (1)–(3), respectively. TFNs are challenging to interpret for those who are unfamiliar with the fuzzy methodology, but it is possible to highlight that TFNs overlap. This fact is unsurprising as it shows the nature of fuzzy set theory when information is extracted from uncertainty derived from Likert-type scales, as in the case of the ISSP questionnaire. The crisp and clear values have been calculated (Equation (3)) to obtain synthesized information. The analysis of TFNs and crisp values was done by country. The results show that Belgian citizens tend to reject illegal immigrants but demand that legal immigrants in the country be able to access education like natives. The same behaviour is repeated when analysing the citizens of the other countries, with some differences. The French have an even greater propensity than the Belgians for equal rights to education between natives and foreigners legally present in the country. In addition to supporting the same educational rights, the Germans perceive the arrival of immigrants as a contribution to new ideas in the country. The Portuguese, on the other hand, are advocates of equal rights between foreign and native citizens, both at the educational and general levels. In Spain, citizens are the ones that show the highest crisp values. In addition to asking for the same rights on an educational and general level, Spain perceives the immigrant as a source of cultural enrichment. In contrast, the UK has the lowest crisp values, as it does not show high values in any items. Thus, the UK citizens are expected to be the most hostile group to immigrants.

Table 4 shows the ideal positive and negative solutions for each item, calculated using Equation (4). In this analysis, it is possible to highlight which group reflects the maximum value obtained for each item and which represents the minimum value. This study analyses the Positive Ideal Solution (PIS) and Negative Ideal Solution (NIS) on all groups determined by countries, regions, political parties, traditions, citizenship, incomes, religions, attendance at religious events, education level, age, work status, political orientations, gender, and parents' citizenship. Regions and political parties represent the positive and negative ideal solutions. The French Green Party (EELV) is the group that represents those citizens who do not associate immigrants with the increase in crime and those who are not partisans of the exclusion of illegal immigrants. Conversely, Germans who voted for the National Democratic Party expressed concern about the relationship between newcomers and the crime rate in the country.

Furthermore, the electorate of the far-right party seems to perceive immigrants as a cultural and employment threat. Like the far-right Germans, the French Lepenists of the Front National look like having a negative perception of immigrants, as they likely see the new arrivals as a threat to their occupational status, to their culture, and seem to conceive the immigrant as the one who cannot bring new ideas to the country. On the other hand, the German voters of the Green Party (Alliance 90/The Greens) would perceive immigrants as a source of new ideas and a source of cultural enrichment. The Occitan regions of Gers, Haute-Pyrenees, and Tarn-et-Garonne and the citizens of the Spanish region of Navarre are likely to represent the groups of citizens who, respectively, think that immigrants are not a threat to their employment; are an economic resource; could be a source of cultural enrichment; and should have the same rights as natives.

On the contrary, the citizens of the Lot and Lozere departments seem not to support the idea of equal rights between natives and immigrants and would not consider foreigners to obtain access to education the same way as natives. Still according to our results, the Northern French region of Ardennes would distinguish immigrants between those legally present in the country and those who are illegal. They are committed to excluding illegal immigrants but consider that legal ones must have access to education like natives.

3.1.1. Attitudes Toward Immigrants

The Hybrid TOPSIS methodology provides synthetic indexes that measure citizens' attitudes toward immigrants (ATI) (see Equations (5) and (6)) according to the socio-economic characteristics of ISSP's respondents in 2013 (Table 5). To this end, results were grouped according to segmentation variables such as country, traditions, citizenship, age, education level, main status, gender, religion, attendance at religious events, income, political orientation, and parents' citizenship. The ATI was classified in descending order within each group analysed.

At the country level, the Iberian Peninsula, Spain and Portugal, and Germany are the countries that have a higher ATI, i.e., more positive attitudes towards immigrants. Belgium and the UK are the countries that in our analysis appear to be more hostile towards immigrants. Those who prefer that newcomers keep their traditions of origin are more open to immigrants than those who demand that immigrants should adapt themselves to the traditions of the majority of the society. The citizenship of the interviewees also shapes the

Table 4
Ideal solutions.

Item	PIS ^a	Group	NIS**	Group
Immigrants increase crime rates	67.26	Green Party - EELV	12.00	National Democratic Party
Immigrants take jobs away from people born in [Country]	75.63	Gers	20.50	National Democratic Party
Legal immigrants should have the same rights	85.17	Navarra	19.64	Lot
Immigrants are generally good for the economy	70.00	Hautes-Pyrenees	26.72	National front
Immigrants bring new ideas and cultures	71.97	Alliance 90/The Greens	26.78	National front
Immigrants undermine culture	73.75	Tarn-et-Garonne	18.25	National Democratic Party
Illegal immigrants should be excluded	58.30	Green Party - EELV	7.50	Ardennes
Legal immigrants should have equal access to education	92.5	Ardennes	50.00	Lozere

^a PIS: Positive Ideal Solution; **NIS: Negative Ideal Solution.

Table 5
Attitudes toward immigrants.

Group	ATI	Group	ATI
Total	0.56	Female	0.56
Spain	0.66	Male	0.55
Germany	0.61	Islamic	0.84
Portugal	0.61	Orthodox	0.81
France	0.54	Other religion	0.65
Belgium	0.49	Jewish	0.61
United Kingdom	0.42	No religion	0.58
Maintain traditions	0.74	Protestant	0.54
Adapt into larger society	0.49	Catholic	0.53
Citizen(N)	0.81	Other Christian	0.44
Citizen (Y)	0.54	Frequently (at least once a week)	0.60
24 years or under	0.62	Occasionally	0.55
25–34 years	0.62	Never	0.55
35–44 years	0.61	Income7	0.60
45–54 years	0.57	Income4	0.58
55–64 years	0.53	Income8	0.58
65–74 years	0.48	Income9	0.58
75 years or over	0.44	Income5	0.57
Upper-level tertiary (Master, Doctor)	0.72	Income6	0.57
Lower-level tertiary	0.62	Highest, Top, 10	0.55
Upper secondary	0.57	Income2	0.54
Post-secondary, non-tertiary	0.52	Income3	0.54
Primary school	0.50	Lowest, Bottom, 01	0.51
Lower secondary	0.46	Far left (communist etc.)	0.72
No formal education	0.45	Left, centre left	0.64
In education	0.69	Centre, liberal	0.54
Other	0.67	Other	0.51
Unemployed and looking for a job	0.61	Right, conservative	0.44
Apprentice or trainee	0.59	Far right (fascist etc.)	0.15
In paid work	0.58	Neither parent was a citizen	0.79
Domestic work	0.53	Only father was a citizen	0.60
Retired	0.47	Only mother was a citizen	0.58
Permanently sick or disabled	0.45	Both were citizens	0.52

Table 6
Political parties' ATI.

Political party	ATI	Political party	ATI		
Green Party - EELV	FR	0.84	Other party PT	PT	0.57
Catalonia Greens	ES	0.83	Socialist Party Francophone	BE	0.55
Alliance 90/The Greens	DE	0.78	Popular Party	ES	0.55
Left Front	FR	0.76	Worker's Struggle	FR	0.54
Left Bloc	PT	0.74	Other FR	FR	0.54
ECOLO	BE	0.73	Liberal Democrats	UK	0.54
Groen	BE	0.71	Christian Democrats Francophone	BE	0.53
Other Party	ES	0.71	Socialist Party Flemish	BE	0.51
Catalonian Republican Left (ERC)	ES	0.70	Canary Islands Coalition Party	ES	0.51
Galician Nationalist Party (BNG)	ES	0.70	Arise the Republic	FR	0.51
Socialist Party	FR	0.70	AFD (Alternative for Germany)	DE	0.46
Democratic and Social Centre	PT	0.70	Labour	UK	0.44
The Left/Die Linke	DE	0.67	Flemish Liberals and Democrats	BE	0.43
Union Progress and Democracy	ES	0.67	Reformist Movement Francophone	BE	0.42
New Anticapitalist Party	FR	0.67	Christian Democrats Flemish	BE	0.40
Social Democratic Party	DE	0.66	List Dedecker - Lijst Dedecker	BE	0.40
Spanish Socialist Workers Party	ES	0.64	Other	BE	0.40
Democratic Movement - MoDem	FR	0.64	Other UK	UK	0.40
Pirate Party Germany	DE	0.63	Union for a Popular Movement	FR	0.39
Social Democratic Party	PT	0.63	Scottish National Party	UK	0.39
Catalonian nationalist parties	ES	0.62	Conservative	UK	0.38
Free Democratic Party	DE	0.61	Plaid Cymru	UK	0.35
Democratic Unity Coalition	PT	0.61	National Flemish Alliance	BE	0.32
Socialist Party	PT	0.60	Popular Party	BE	0.32
Freie Wähler or Other	DE	0.59	Flemish Interest	BE	0.16
CDU/CSU	DE	0.57	National front	FR	0.15
Basque Nationalist Party	ES	0.57	National Democratic Party	DE	0.09

ATI, as natives are much less open to immigrants than foreign citizens. Based on the age of the respondents, the ATI can be described as inversely proportional to age. Thus, younger respondents are more open to immigrants, whereas elderly are related to higher hostility to newcomers. Social status and level of education are proxies of attitudes towards immigrants. Either being a student, or having a master or Ph.D., positively influences ATI. Regarding religion and religious attendance, Muslims, Orthodox, and those who often participate in religious events have more positive ATIs than Catholics and those who never attend religious events. Furthermore, citizens who express a left-wing political orientation, medium-high incomers, and children of foreign citizens are among the most open to immigrants.

Table 7
Elasticities.

Group	C1	C2	C3	C4	C5	C6	C7	C8
Total	0.20	0.23	0.29	0.18	0.20	0.23	0.14	0.26
BE-Belgium	0.21	0.26	0.29	0.19	0.21	0.25	0.14	0.28
FR-France	0.21	0.24	0.26	0.17	0.19	0.23	0.14	0.26
DE-Germany	0.18	0.22	0.28	0.17	0.17	0.21	0.14	0.24
PT-Portugal	0.18	0.20	0.28	0.16	0.17	0.20	0.14	0.24
ES-Spain	0.18	0.21	0.25	0.16	0.17	0.19	0.14	0.22
Christian Democrats Flemish - CD&V	0.24	0.29	0.30	0.21	0.27	0.28	0.14	0.28
Green Party Flemish - Groen	0.18	0.21	0.29	0.16	0.15	0.18	0.14	0.25
List Dedecker - Lijst Dedecker	0.15	0.34	0.22	0.09	0.25	0.37	0.13	0.26
National Flemish Alliance N-VA	0.24	0.35	0.31	0.20	0.28	0.38	0.13	0.34
Flemish Liberals and Democrats	0.20	0.28	0.30	0.19	0.25	0.29	0.12	0.28
Socialist Party Flemish- SP.a	0.22	0.24	0.29	0.17	0.21	0.25	0.14	0.26
Flemish Interest - Vlaams Belang	0.33	0.58	0.80	0.15	0.24	0.35	0.26	0.35
Green Party Francophone - Ecolo	0.15	0.20	0.30	0.17	0.16	0.17	0.10	0.21
Christian Democrats Francophone - CDH	0.21	0.24	0.27	0.18	0.19	0.24	0.15	0.27
Socialist Party Francophone - PS	0.21	0.23	0.27	0.18	0.19	0.23	0.14	0.26
Reformist Movement Francophone - MR	0.24	0.33	0.22	0.19	0.20	0.25	0.12	0.35
Popular Party - Parti Populaire	0.21	0.48	0.36	0.09	0.20	0.25	0.07	0.45
CDU/CSU	0.17	0.23	0.28	0.18	0.19	0.22	0.13	0.25
Social Democratic Party - SPD	0.18	0.21	0.29	0.15	0.15	0.20	0.14	0.23
Free Democratic Party - FDP	0.18	0.22	0.28	0.16	0.17	0.21	0.14	0.24
The Left/Die Linke	0.18	0.20	0.29	0.16	0.14	0.20	0.14	0.23
Alliance 90/The Greens	0.15	0.14	0.33	0.11	0.05	0.14	0.10	0.22
National Democratic Party - NPD	0.03	0.05	0.62	0.64	1.76	0.05	0.26	1.50
Pirate Party Germany/Piratenpartei	0.18	0.21	0.28	0.16	0.16	0.21	0.14	0.23
AFD (Alternative for Germany)	0.14	0.27	0.31	0.21	0.24	0.21	0.13	0.32
Freie Wähler or Other	0.17	0.22	0.27	0.17	0.18	0.22	0.13	0.24
PSOE	0.17	0.21	0.25	0.16	0.17	0.19	0.13	0.22
Popular Party - PP	0.18	0.18	0.32	0.16	0.17	0.22	0.10	0.24
Catalonia Greens	0.11	0.24	0.23	0.17	0.13	0.11	0.17	0.24
Catalonian nationalist parties	0.16	0.18	0.25	0.15	0.16	0.17	0.10	0.20
Union Progress and Democracy - UPyD	0.15	0.21	0.22	0.16	0.16	0.18	0.13	0.22
Basque Nationalist Party - PNV	0.16	0.16	0.28	0.16	0.16	0.20	0.10	0.22
Catalonian Republican Left - ERC	0.14	0.20	0.20	0.17	0.15	0.10	0.13	0.18
Galician Nationalist Party - BNG	0.15	0.17	0.26	0.17	0.14	0.20	0.09	0.25
Canary Islands Coalition Party - CC	0.17	0.19	0.35	0.14	0.14	0.18	0.12	0.28
Worker's Struggle	0.21	0.21	0.18	0.13	0.15	0.20	0.13	0.23
New Anticapitalist Party	0.13	0.19	0.27	0.17	0.18	0.20	0.14	0.18
Left Front - FG - Jean-Luc Mélenchon	0.10	0.14	0.31	0.17	0.16	0.10	0.12	0.18
Socialist Party - PS - Francois Hollande	0.15	0.18	0.30	0.15	0.17	0.17	0.14	0.21
Green Party - EELV - Eva Joly	0.03	0.06	0.38	0.14	0.10	0.06	0.03	0.11
Democratic Movement - MoDem	0.17	0.19	0.26	0.16	0.17	0.19	0.14	0.21
Union for a Popular Movement	0.23	0.34	0.22	0.20	0.20	0.27	0.12	0.42
Arise the Republic	0.24	0.25	0.19	0.16	0.19	0.21	0.11	0.26
National front - FN - Marine Le Pen	0.42	0.63	0.47	0.06	0.06	0.33	0.18	1.31
Conservative - CONS	0.27	0.25	0.28	0.26	0.28	0.29	0.09	0.25
Labour - LAB	0.27	0.22	0.27	0.23	0.25	0.26	0.12	0.23
Liberal Democrats - SLD	0.22	0.21	0.24	0.17	0.19	0.23	0.12	0.22
Scottish National Party - SNP	0.26	0.29	0.33	0.20	0.23	0.30	0.10	0.30
Plaid Cymru - PC	0.10	0.14	0.49	0.25	0.31	0.34	0.07	0.13
Left Bloc - BE, Bloco de Esquerda	0.14	0.22	0.26	0.12	0.12	0.12	0.13	0.28
Democratic and Social Centre	0.18	0.20	0.27	0.16	0.16	0.15	0.14	0.25
Democratic Unity Coalition	0.17	0.19	0.28	0.16	0.17	0.20	0.14	0.22
Social Democratic Party - PPD-PSD	0.18	0.20	0.27	0.15	0.16	0.19	0.13	0.24
Socialist Party - PS	0.18	0.20	0.28	0.16	0.18	0.21	0.14	0.24
Other party PT	0.17	0.17	0.27	0.16	0.18	0.22	0.12	0.23

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 the economy; C5: Immigrants bring new ideas and cultures; C6: Immigrants undermine culture; C7: Illegal immigrants should be excluded; C8: Legal immigrants should have equal access to education.

Table 6 presents the results of the ATI among the political parties voted in the countries analysed in the study. Parties were sorted according to the ATI value. The left side of Table 6 represents those parties that are more open to immigrants, whereas the right side includes the political parties with less tolerance.

The analysis of the ATI's results at the political party level can be split divided into three broad categories: green party supporters are the most open to immigrants; left-wing parties show positive attitudes towards immigrants; right-wing parties are those that are more hostile to immigrants. In the ATI ranking, the top three positions are of the French Green Party (EELV), the Spanish one (Catalonia Greens), and the German one (Alliance90). The two Belgian green parties are also in the top 10 of the most open parties. All left-wing parties are in the top half of the ranking, except for the Belgian socialist party (Socialist Party Francophone - PS), the left-wing French party, Worker's Struggle - LO, and the British left party, Labour party.

On the other hand, right-wing and far-right parties show negative attitude. For example, the German National Democratic Party and Marine Le Pen's Front National electorate is formed by citizens who express the most opposed positions. Completing the bottom 10 of the ATI rankings are the Belgian People's Party, the British Conservatives, and Sarkozy's Union for a Popular Movement. The analysis provide other interesting results. The polarization between left (more positive ATI) and right (more negative ATI) does not occur in Portugal, where the right-wing party, Democratic and Social Center has an ATI of 0.70, whereas the left parties, Social Democratic Party and Socialist Party, show a lower ATI, 0.63 and 0.60 respectively. The results also show that all British parties are placed in the second half of the ATI ranking, i.e., with low values, and even the Labour Party has a more negative ATI value (0.44) than far-right parties such as the French Arise the Republic (0.51) and the German AfD (0.46). Finally, Table 6 reveals an interesting result regarding the behaviour of the electorate of the separatist parties. The Galicians of the BNG and the Catalans of the ERC show positive attitude, whereas the voters of the Scottish, Welsh, and Flemish separatist parties clearly express hostility towards the newcomers.

At a final step, the elasticities of ATI by total sample, the analysed countries, and political parties were calculated, by using Equation (7) (Table 7). The elasticity analysis is studied because it provides interesting insights into the criteria that affect ATI in each country and for any political party. Results show that the attitudes towards immigrants in the countries under analysis are inelastic. Similarly, all the ATI values of left-wing political parties are also inelastic to all the criteria analysed for constructing the indicator that measures citizens' attitudes towards immigrants. Among the right-wing parties, however, it is clear that the ATI of the Belgian People's Party voters is more sensitive to the perception of the immigrants as a threat to occupation and the equality of the right of access to education. A dual result is found in German and French ultra-right-wing parties. The German ultra-right ATI of the National Democratic Party is affected mainly by economic, cultural, and equal rights issues. To these characteristics, the French voters of Marine Le Pen add insecurity, as their opposition to immigrants is associated on the perception of an increase in crime, a competitive threat in the labor market, and unequal access to the education. This last result is also shared by the voters of the party of the former President of the French Republic, Nicolas Sarkozy (Union for a Popular Movement). Finally, the results highlight a particular influence between the Welsh independence parties (Plaid Cymru) and Flemish (Flemish Interest), as the ATI voters of both parties are sensitive to the equality of rights between natives and foreigners. Furthermore, the issue of the employment threat of immigrants also influences the attitudes toward immigrants of the Flemish voters.

4. Discussion

The current literature on citizens' attitudes towards immigrants often uses the Confirmatory Factor Analysis (CFA) and the Structural Equation Model (SEM). This study aims to apply a new methodology in this field of studies, and more broadly in the field of social sciences. The Fuzzy-Hybrid TOPSIS was introduced (Martín & Indelicato, 2022). The methodology proves effective as it consistently replicates obtained results from previous studies [1,19,35,60].

Many scholars have studied the anti-immigrant sentiment and how it is shaped by country, religion, age, income, and education [9, 15,16,61–64]. This paper combines socioeconomic characteristics with the features of the last political party respondents have voted for.

Despite the differences observed in the ATI across the analysed countries, results clearly show that, except for those from the UK, interviewed citizens by the ISSP are likely to express a favourable opinion on giving the same rights to education to natives and immigrants. These results are supported by Drachman [65], who explains that the immigrant who wants to enter the country to study is seen as a resource, and not as a threat in the competition of the labour market. The results also replicate other studies on attitudes towards immigrants [36,57,66–69].

Our results indicate that analysed countries can be ideally divided into three areas, namely those that show higher openness to immigrants, that is those of the Iberian Peninsula; those with fairly positive attitudes towards immigrants, that is France and Germany; and Belgium and the United Kingdom, which represent the ones where respondents appear to be more hostile. The type of immigration can explain the substantial differences between countries. Following Hopkins et al. [70] and McLaren et al. [71], Spain and the United Kingdom have different ATI values because most immigrants to the Iberian country are from South America. Thus, Spanish people share the language with the newcomers, facilitating integration and social interactions.

Regarding the results on the last political party voted for, our results show a polarization on the issue of anti-immigrant sentiment between right and left voters and are consistent with Alonso and da Fonseca [26] that showed that left party voters are more open to immigrants. This issue can be clearly explained by the fact that the political agenda of left Europe includes explicit immigrant integration policies [72]. There are some exceptions, such as the Portuguese left party (Socialist Party), which is even more hostile than the right party (Democratic and Social Center). Però [73] linked the left and hostility towards immigrants, arguing that the political character of the mainstream left (in its civic, social, political, and administrative aspects) is its inability to "integrate" national cultural recognition with the "integration" of immigrants.

The far-right party results are empirically contrasted as the last two positions in the ATI ranking are occupied by the German National Democratic Party and the Marine Le Pen (Front National) party. This result is easily interpretable as the speeches of Marine Le Pen's party aim to associate the arrival of new immigrants with the increase in terrorism on the national territory [66]. The same argument is also replicated in the case of other right-wing European parties, such as the German Alternative for Germany and the Belgian Popular Party. In this regard, Halikiopoulou et al. [74] explain that the political discourses of the European wing right support the same narratives of the anti-immigrant political agenda of the French far-right Front National.

Furthermore, the results show that voters with the most positive attitudes toward immigrants support green parties. Kortmann and Stecker [75] argue that European greens have brought a paradigm shift in immigration and integration policy in parliaments. In this regard, in Germany, the Green Party (Alliance 90) was the first to propose laws on liberalized naturalization and immigration.

5. Conclusions

This paper studied attitudes towards immigrants through an innovative method in the field of social sciences. Many scholars have studied the topic by adopting the Confirmatory Factor Analysis (CFA) and the Structural Equation Model (SEM) [61,64,76]. The Hybrid-Fuzzy TOPSIS was used in the study as this method has an undisputed advantage on dealing with the vague information provided by the Likert scale. ISSP 2013 data from the National Identity module were extracted. Eight items were chosen to measure attitudes towards immigrants (ATI). The analysis was carried out at the country level, and adding the last political party the respondents have voted for was one of the main novelties.

Results basically replicate the findings from other studies [9,15,16,61–64]. The countries of the Iberian Peninsula appear as those with more positive attitudes, whereas Belgium and the United Kingdom are mostly hostile. Furthermore, the analysis of attitudes towards immigrants polarizes political party narratives into parties that are more open toward immigrants and those that are more closed. Left and green party voters show more positive attitude toward immigrants [26,72,75]. Instead, the results on right-wing party voters confirm their anti-immigrant political agenda [66].

In summary, Europeans' attitudes towards immigrants tend to be positive when they are the moderate left-wing electorate while voting for right-wing parties seems to be associated with low openness attitudes towards immigrants. In a context where migratory flows are accentuating, due to the Russian invasion of Ukraine (2015 and 2022), the Afghan crisis, the war in Syria, and others, the attitudes toward immigrants are gaining public opinion debate and the researchers' interest. In fact, this phenomenon has increased the electorate of nationalist parties [77], and political public opinion wonders if being open to immigrants translates into a weakening of their states [24]. Nevertheless, the results of this work are based on available data, so they do not consider other recent factors such as the Russian invasion in Ukraine.

The study has some limitations. The number of countries is limited, and adding other European countries to the analysis would be of clear interest. Furthermore, only one reference year is considered, namely 2013. It could be helpful to broaden the time horizon to detect the dynamism of attitudes towards immigrants. Although the methodology allows for study at a finer level, the approach has been used only at the aggregate one. Analysing attitudes towards immigrants on an individual level would be beneficial in order to point out the individual differences within countries and between political party voters.

Author contribution statement

Alessandro Indelicato; Juan Carlos Martín; Raffaele Scuderi: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Data availability statement

Data available on <https://www.gesis.org/en/issp/modules/issp-modules-by-topic/national-identity/2013> (accessed on June 15, 2022)

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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