

ORIGINAL ARTICLE

Open Access



Configurations of attitudes toward immigration in Europe: evidence of polarization, ambivalence, and multidimensionality

Ronald Kwon^{1*†}, William J. Scarborough^{1*†} and Roberto Gallardo²

[†]Ronald Kwon and William J. Scarborough contributed equally to this manuscript.

*Correspondence: ronald.kwon@unt.edu; william.scarborough@unt.edu

¹ Sociology Department, University of North Texas, 1155 Union Circle, Denton, TX 76203, USA

² Criminology Department, University of North Texas, Dallas, USA

Abstract

Scholarship on immigrant stereotypes suggest that individuals' viewpoints toward immigration may be differentiated across the dimensions of culture and economics. In this study, we use latent class analysis, which avoids the assumption that attitudes are unidimensional, scalar, and polarized, to examine configurations of immigration attitudes in Europe from 2002 through 2010, a period of time leading up to and within the Great Recession. Analyzing a set of items capturing different aspects of immigration attitudes, we discover that although there are substantial segments of the European population who hold polarized anti- or pro-immigration attitudes, the most common viewpoint is ambivalence. Specifically, those with ambivalent attitudes feel that immigration enriches national culture but also believe that immigration has less benefits for the economy. Using an interrupted time series design, we explore how attitudinal configurations shifted with the onset of the Great Recession. The crisis coincided with a rise in ambivalent attitudes as economic threat grew more than concerns about culture.

Keywords: Immigration attitudes, Europe, Public opinion, Latent class analysis

Introduction

Immigration is increasingly a central component of the discontents associated with globalization. In studying these dynamics, scholars have heavily drawn upon realistic (e.g., economic and political), symbolic (e.g., cultural), and ethnic prejudice as key sources of threat to understand opposition to immigration (Bellovary et al. 2020; Fink & Brady, 2020; Gorodzeisky, 2011; Kwon & Curran, 2016; McLaren, 2003; Quillian, 1995). Realistic threat perspectives suggest that perceived competition over jobs, wages, and social welfare benefits fuels opposition to immigration. On the other hand, research on symbolic threat has focused on the role of nativist concerns related to perceived cultural differences between new migrants and host country norms (Callens & Meuleman, 2016; Hainmueller & Hiscox, 2007; Lucassen & Lubbers, 2012). These two dimensions represent generic opposition to immigration. That is, blanket opposition to immigration can

arise toward immigrant groups regardless of their racial or ethnic origin (Gorodzeisky & Semyonov, 2019).

A smaller body of literature now identifies group level characteristics, rather than solely generalized dimensions of threat perceptions, to account for greater opposition to specific immigrant groups that differ ethnically from the majority in the host country (Gorodzeisky & Semyonov, 2019; Schmidt, 2021). While threat perceptions perspectives have greatly expanded our understanding of views towards immigration, much of this literature treats attitudes towards immigration as unidimensional, despite research that identifies that the sources of threat perceptions often originate from different sources (Bloom et al., 2015; Callens & Meuleman, 2016; Gorodzeisky & Semyonov, 2019). However, in recent years, scholars have increasingly paid greater attention to multidimensionality in attitudes. For instance, drawing on ESS data, several cross-sectional studies show how preferences for specific racial/ethnic groups (e.g. Muslim, Jewish, or Roma immigrants), may uniquely differ from more general opposition towards ethnically diverse immigration (Heath & Richards, 2020; Kwon et al., 2023). Further developing this research stream, other studies have focused on more general dimensions related to how individuals blend general acceptance of immigration alongside concerns over its societal impact on host societies (Genge & Bartolucci, 2022). Much of these studies have primarily focused on the years during or leading up to the refugee crisis in Europe (Genge & Bartolucci, 2022; Heath & Richards, 2020).

In this paper, we expand on studies that examine multidimensionality in immigration attitudes in the following ways. First, we incorporate all three dimensions of realistic, cultural, and differing racial/ethnic threat perceptions simultaneously. Although studies have used other measures to capture racial/ethnic threat perceptions—such as views on restricting immigration from poorer countries or same race immigration (e.g., Genge & Bartolucci, 2022)—scholars have identified shortcomings in the ability of these measures to capture the racial/ethnic component. In particular, Heath and Richards (2020, p. 497) point out that “questions on ‘same race’ do not directly tap into symbolic group boundaries.” They further argue that survey items measuring views about immigration from poorer countries are an even “tougher benchmark for comparison of culturally distant groups.” Reiterating these concerns, Gorodzeisky and Semyonov (2019) show that attitudes in Europe are substantially more accepting of immigrants of the same race when compared to immigration from racially/ethnically different minorities—further highlighting that boundary making processes are likely substantively different between these two types of immigration.

Second, we evaluate how global shocks related to the 2008 economic crisis shaped multidimensionality in attitudes. National economies across Europe contracted on average by 3.6 percent during the Great Recession (OECD 2010), with all EU core countries seeing declines in GDP during the fourth quarter of 2008 (Mazurek, 2016). Our examination of the financial crisis provides a theoretically informative counter point to existing studies that have predominantly examined multidimensionality during the refugee crisis. Despite sharing similarities as exogenous shocks related to immigration, the refugee crisis has been concentrated to a small number of EU members, whereas the financial shock of the recession was more universal. For instance, nearly 72% of asylum applications were to just five EU members in 2015. The largest admitting states included: Germany, Sweden,

Italy, France, and Hungary—but even among these countries, Germany stands out (Gieselmann, Brady, and Naujoks 2021; Trauner, 2016). Within the broader EU-28, Germany alone took one in three asylum applications in 2015 (Trauner, 2016).

Building on these two gaps, we use Latent Class Analysis (LCA) on data from the European Social Survey (ESS) that focuses on the time period that covers the most severe global economic disaster since the Great Depression (2002–2010). LCA methods are uniquely suited to identify both the intensity of opinions and their configurations across different aspects of immigration. After identifying clusters, we use a series of hierarchical logistic regression models that incorporate an interrupted time series design to examine how these attitudinal configurations changed over time with respect to the Great Recession, whether these shifts are moderated by welfare systems, and the degree to which changes in countries' unemployment rates shaped immigration attitudes. In doing so, we contribute to a burgeoning field of scholarship that seeks to better understand how global shocks influence multidimensionality in attitudes toward immigration across different national contexts (Genge & Bartolucci, 2022; Heath & Richards, 2020).

Results point to five different types of attitudinal clusters that include a pro, anti-, and moderate perspectives, alongside two types of ambivalent attitudes—slight and strong ambivalents. Contrary to other attitudinal clusters, ambivalents represent a unique group that more strongly favors immigration's contribution to the national culture than its contribution to the economy. Providing key theoretical contributions, our findings indicate that cultural and economic concerns often diverge and may constitute two dimensions of immigration attitudes which can shift independently in response to economic crises. This is especially true among strong ambivalents. Examining change from 2002 through 2010, we find that slight ambivalent attitudes rose substantially with the onset of the Great Recession, reflecting greater relative concerns over the economy than culture. These trends were most pronounced in countries that experienced less severe economic consequences during the recession, suggesting that the financial impacts of the recession did not stop a growing embrace of immigration's cultural contributions, even while economic concerns remained.

Intergroup threat perceptions and immigration

Much research on immigration attitudes has adopted an intergroup conflict approach. Some of the earliest sociological accounts outline sources related to economic concerns, or what scholars have often termed *realistic threats* (Blalock 1967; Blumer, 1958; Ceobanu & Escandell, 2010; Quillian, 1995). Since these early conceptions, intergroup threat theories have expanded to incorporate mechanisms centered on cultural differences, or *symbolic threats* (Lucassens and Lubbers 2012; Stephan et al., 2000) and *ethnic prejudice* toward immigrants originating from the Global South (Gorodzeisky & Semyonov, 2019; Schmidt, 2021).

Realistic threat theories suggest that individuals that are most vulnerable to economic competition from immigration are also the most likely to favor restricting migration (Mayda, 2006; Scheve & Slaughter, 2001). Consistent with realistic threat perspectives, prior studies show that attitudes toward immigration are more negative among individuals in occupations with a larger share of labor supply from immigration (Mayda, 2006), among the unemployed (Billiet et al., 2014), and among individuals with lower levels

of education, who may view their competitive advantage in the labor market in more uncertain terms (Kunovich, 2002).

Symbolic threat perspectives point to alternative mechanisms of opposition (Stephan et al., 2000). Rising immigration across Europe triggers concerns over the loss of national traditions and norms, resulting in opposition to immigration (Bellovary et al., 2020). Building on cultural threat explanations, some studies have argued that perceived value differences over gender equality, gay rights, and democratic values are constructed as new cultural gradients between European host societies and new migrants which may help explain the transition towards more coercive forms of integration policies (Kwon & Hughes, 2018; Kwon et al., 2017).

Combined, realistic and symbolic threat perceptions represent two universal sources of threat that pertain to all immigrants irrespective of their origin (Gorodzeisky & Semyonov, 2019). Emerging scholarship in the field has expanded in recent years and identifies additional universal sources that might generate opposition to immigration that are not mutually exclusive from realistic and cultural sources.

For instance, Dennison and Geddes (2021) link opposition to immigration that might arise from anxiety over social conflict. Unlike realistic and cultural threats that entail motivations to “win” conflict with other groups, opposition may rather stem from separate desires to sustain continuity, order, and the need to avoid instability (Dennison & Geddes, 2021). Immigration presents challenges to these values and is perceived as an additional barrier to resolving conflict more generally. For some scholars, aversion to social conflict helps explain opposition to immigration, particularly for cultural or economic minorities that reject immigration and hold beliefs that run contrary to expectations from realistic or cultural threat perspectives (Dennison & Geddes, 2021). Other studies identify psychological predispositions as another potential source of universal threat. For instance, some scholarships suggest that national trauma shapes anti-immigration views. Here, studies suggest that historical legacies of geo-political conflicts that involved violence and territorial losses may shape present opposition to immigration (Hiers et al., 2017).

A second general stream of threat sources points to group specific characteristics and identifies ethnic prejudice as an additional dimension of threat perceptions on top of economic and cultural threats (Gorodzeisky & Semyonov, 2019; Schmidt, 2021). As immigration from non-EU countries has inexorably altered the demographic composition of many European urban areas, scholars increasingly identify racism and xenophobia as independent mechanisms that shape attitudes towards immigration (Bloom et al., 2015; Gorodzeisky & Semyonov, 2019; O’Connell & Raker, 2018; Pereira et al., 2010; Pettigrew, 1998).

For example, Gorodzeisky and Semyonov (2019) show that ethnic prejudice has separate additive effects on attitudes towards immigration that is not mediated by factors related to universal forms of threat. Using ESS data, Schmidt (2021, p.1) similarly differentiates between realistic threat perceptions, symbolic threat perceptions, and ethnic prejudice to conclude that “it is less economic or cultural threat perceptions, but ethnic prejudice that plays a key role for natives to oppose immigration.” Building on unique group specific characteristics, other scholarships link early life socialization with threat. Here, adolescent context appears to play an enduring influence on later life beliefs about

specific racial groups and implicates negative experiences during the formative years of adolescence (Goldman & Hopkins, 2020).

Multidimensionality in threat perceptions

Despite a growing literature of universal and group specific sources of threat that expands beyond realistic, cultural, and ethnic sources of threat, we focus on these dimensions as they are among the most heavily studied from a unidimensional framework and most closely align with data from the ESS (Ceobanu & Escandell, 2010; Schmidt, 2021). Taken together, unified conceptions suggest that those who oppose immigration on economic grounds are also likely to believe that immigration has limited cultural benefits, in addition to favoring restricting ethnically diverse immigration. Despite an extensive literature showing that different types of immigration attitudes are correlated (Ceobanu & Escandell, 2010), in recent years, public opinion research on immigration attitudes suggests that contemporary views towards immigration may be experiencing changes (Bail 2008; Green, 2007; Heath & Roberts, 2020; Kwon et al., 2022). Detailing these changes, some scholars suggest that overt forms of prejudice based on ascribed characteristics such as ethnicity are increasingly viewed as illegitimate grounds for rejecting immigration. In their wake, traditional boundaries of race and ethnicity are being replaced by merit-based preferences that emphasize economic or cultural deficiencies as new explanations for immigration opposition (Bail, 2008; Green, 2007; Heath and Roberts 2020; Kwon et al., 2023).

Similar dynamics have also been observed in the US. For instance, comparing the immigration attitudes of residents in Houston, TX to those residing in the city's suburbs, O'Connell and Raker (2018) find that both groups share similar views on general dimensions of immigration, but concerns over the economic impact of immigration were more widespread among suburban residents, and particularly concentrated among whites. These researchers argue that such divergent trends represent multifaceted components of racial exclusion in the context of Americans' immigration attitudes and call for further exploration of multidimensionality in attitudes.

Contextual determinants of threat perceptions to immigration

Threat mechanisms may be particularly salient during periods of social instability or economic downturns (Bellovary et al., 2020; Billiet et al., 2014; Gidron & Mijs, 2019; Quillian, 1995; Wilkes et al., 2008). Here, the severity of the Great Recession provides a rare look into exogenous shocks on the multidimensionality of threat attitudes across countries and over time. In respects to spatial considerations, European countries have distinct institutional contexts, particularly in reference to the welfare state (Esping-Andersen, 1990).

On one end of the continuum lies the Social Democratic model that is characterized by wide coverage of social services to a large segment of the population and a strong role of the government. On the opposite end lies the Liberal welfare model, which is characterized by a limited role of the state in providing a social safety net, limited coverage, and a reliance on privatization to fulfill government services (Roosma et al., 2014). In Liberal welfare countries, competition in the labor market may be fiercer during periods of economic downturn because the government has a limited role in providing labor

protections. Conversely, in settings where the government takes a more active role in setting wages and providing a social safety net (i.e. Social Democratic and Conservative models), residents may be protected from volatile economic conditions and less threatened by additional competition that may arise from immigration. This may be especially true if welfare benefits are restricted by citizenship. At the same time, in spatial contexts where the recession hit some countries harder than others, concerns over economic competition from immigration may be less pronounced than countries that experienced greater economic harm.

These institutional/spatial differences may further intersect with recent norms that favor greater cultural inclusion and beliefs that value multiculturalism have become more normative (Green, 2007; Igarashi, 2022). Indeed, research on immigrant stereotypes in the US finds that individuals' perceptions of different immigrant groups often diverge across dimensions related to culture (e.g., warmth) and socio-economics (Lee & Fiske, 2006). Views of Mexican immigration in the US, for example, commonly incorporate appreciation for this group's cultural contributions (e.g., warmth) alongside feelings that immigration from Mexico undermines economic growth and opportunity (Reyna et al., 2013). These studies are indicative that race/ethnic may condition how specific immigrant groups are perceived.

Current study

In this study, we explore whether the unidimensionality framework sufficiently accounts for different types of attitudinal configurations or whether some individuals possess ambivalent attitudes where they view immigration positively in some respects and negatively on others. Our second motivating question examines how attitudes change during global shocks, such as the 2008 financial crisis. Throughout each research question, we also pay attention to heterogeneity across European nations to examine how configurations of immigration attitudes and their relationship to the recession vary across national contexts.

Data

We address our research questions with data from the European Social Survey (ESS) (2002–2010). The ESS is a repeated cross-sectional survey conducted every two years on a representative sample of predominantly European countries. We focus on the years from 2002 through 2010, which covers a theoretically important time period leading up to and within the economic recession. Following previous research (Gidron & Mijs, 2019), we treat the European recession as starting in 2008 when GDP first showed significant and enduring declines and unemployment began a steady increase that would continue through 2010 for most European nations (Biegert and Ebbinghuas, 2022). Although the recession continued beyond 2010 for several countries, we censor our analysis at this year to isolate both the economic consequences of the recession as well as the cultural anxieties taking place during this time when the majority of European countries were in economic crisis.

We limit our analyses to Western, Central, and Mediterranean European countries and exclude Eastern European countries for several reasons. First, the majority of Eastern European countries during this recessionary period experienced net outmigration

because of greater economic opportunities in Western, Central, and Mediterranean European countries. For instance, 2002 estimates suggest that Eastern European countries such as Bulgaria (-85,500), Estonia (-18,406), Poland (-183,471), and Ukraine (-165,445) experienced substantial outmigration or emigration (World Development Indicators (WDI), 2020). Here, contextual threat determinants associated with the size of the foreign-born population better describe the experiences of more established immigration destinations in Western and Central Europe, which experienced growth in net migration during the recession years (WDI 2020).

Second, Eastern European countries do not fit well into established welfare typologies, which represents another key contextual determinant of interest in this study. Rather, established typologies largely describe the welfare organization of highly developed capitalist democracies, which often differ in key respects to Eastern European countries in respects to the length of party coalitions, size of the welfare state, degree of privatization, standard of living, and union membership (Esping-Andersen, 1990; Korpi & Palme, 2003).

In addition, we drop respondents who did not answer any of the immigration questions we analyze ($n = 832$),¹ and also exclude Italy and Austria ($n = 9,543$). Italy and Austria did not have observations that appeared in both the pre-recession (2002–2006) and post-recession (2008–2010) years. Our total sample includes 137,750 respondents across 14 countries that appeared in both pre and post-recession years: Belgium, Denmark, Finland, France, Germany, Great Britain, Greece, Ireland, Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland.

We use two methodological approaches in our study. First, we apply latent class analysis to identify predominant configurations of immigration attitudes. We discuss this approach in the following section. Then, we report results from these models to examine attitudinal polarization and multidimensionality. Next, we use a series of hierarchical logistic regression models to investigate how the prevalence of attitudinal configurations have changed over time with respect to the Great Recession. We incorporate an interrupted time series design into these models to identify trends in attitude prevalence prior to the recession, discrete change at the onset of the recession, and trends after the onset of the recession. Because prior research has found the effects of economic crises vary by nation's economic context (Billiet et al., 2014; Quillian, 1995; Wilkes et al., 2008), we also explore whether attitudinal trends vary by countries' type of welfare system and change in the unemployment rate.

Latent class analysis

LCA is a finite mixture model that reduces the complexity of item responses by identifying prevalent clusters of response patterns. While factor analyses (FAs) are commonly utilized methods to account for multidimensionality, there are several stringent assumptions that are often violated in practice. First, traditional FA assumes that indicators are continuous and built on assumptions of normality in indicators (Magidson & Vermunt, 2003). While this is an adequate assumption for our economic indicator, the cultural indicator appears bimodal according to histograms (Fig. 1).

¹ Inclusion of these respondents does not substantively change our results.

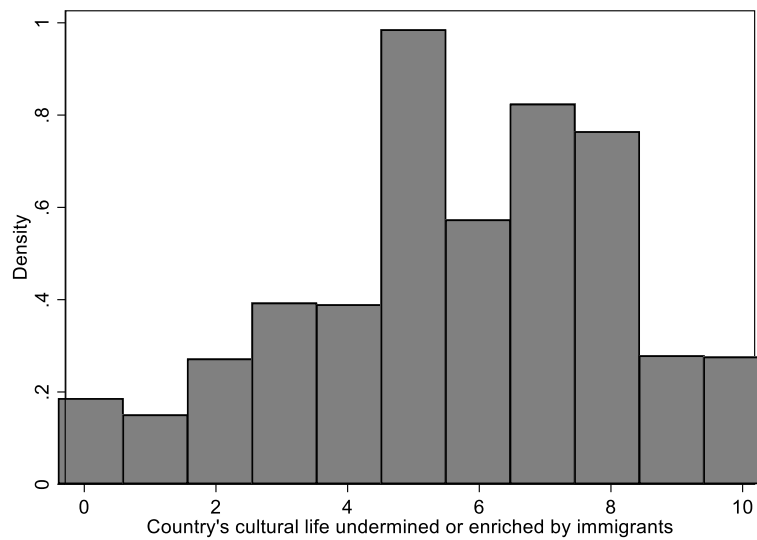


Fig. 1 Histogram of cultural indicator

We observe two peaks at the midpoint (5), alongside peaks at the 75th percentile (7–8). Complicating the use of FA is that the ESS uses a categorical measure of ethnic exclusion. In these cases, the linearity assumption is typically violated, which can result in a variety of factor loading solutions depending on which rotations are utilized, of which, the literature provides unclear guidance (Magidson & Vermunt, 2003).

Alternatively, modelling response patterns as a function of discrete latent classes relaxes these assumptions, while allowing for the emergence of multidimensionality where indicators may be positively correlated in some clusters, while negatively correlated in others. We use model fit statistics alongside theoretical considerations to compare distinctions between classes weighed against the cost of additional parameters (Scarborough et al., 2019).

We use three survey items from the ESS as indicators of respondents’ immigration attitudes. Question wording and response options are detailed in Table 1. These items have been used extensively in research on immigration attitudes (Hainmueller & Hiscox, 2007; Meuleman et al., 2009), but less attention has been directed toward examining

Table 1 ESS Immigration Attitude Survey Items

Item	Aspect of Immigration Attitudes	Question Wording	Response Options
1	Realistic Threat	Would you say it is generally bad or good for [country]’s economy that people come to live here from other countries?	0-Bad for the economy 1-2-3-4-5-6-7-8-9 10-Good for the economy
2	Symbolic Threat	Would you say that [country]’s cultural life is generally undermined or enriched by people coming to live here from other countries?	0-Cultural Life Undermined 1-2-3-4-5-6-7-8-9 10-Cultural Life Enriched
3	Ethnic Prejudice	To what extent do you think [country] should allow people of a different race or ethnic group from most [country] people?	1-Allow many to come and live here 2-Allow some 3-Allow a few 4-Allow none

Note: ESS original labels included IMBGECO (1), IMUECLT (2), IMDFETN (3)

multidimensionality. The first item reflects a core feature in theories of realistic threat perceptions which propose that anti-immigration sentiment is driven by concerns that immigration is bad for the economy. The second item provides an indicator of symbolic threat perceptions by measuring the extent to which respondents feel that national culture is undermined or enriched by immigration. Third, we include a measure of ethnic prejudice with a question asking how respondents feel about immigration from different ethnic groups. Of the three items we analyze, the two measuring realistic and symbolic threat focus on the effects of immigration, whereas the third item on ethnic exclusion is framed around policy, measuring respondents' views of the number of immigrants of a different race/ethnicity that should be allowed. Policy attitudes are commonly used as indicators for feelings of racial exclusion (Moberg et al., 2019; Tuch & Hughes, 2011), a practice we follow here. However, it is important to note these substantive differences in question orientation. Among the configurations we identify, it is possible that views about the perceived effects of immigration inform policy preferences on racial/ethnic exclusion. Here, we focus on the identification of attitudinal configurations rather than the causal ordering of their constituent parts, although we note when our findings lend initial insight into these more dynamic relationships.

Items measuring realistic threat perceptions pertaining to the economy and symbolic threat focusing on national culture are measured on an 11-point scale. Because cell-counts for individual response-options were low for many points on the scale, we treat these indicators as continuous in latent class models. Substantive findings remain similar, however, when they are treated as categorical. For both of these items, higher scores reflect pro-immigration opinions toward the economy (immigration good for the economy) and culture (immigration enriches culture). The third indicator measuring feelings of ethnic prejudice has four response options and is treated categorically in LCA.

Using the three indicators of immigration attitudes, we ran LCA models applying one through ten classes. In the results below, we report fit statistics for each LCA model using one to ten classes. Identifying the best fitting models, we then characterize classes using indicator means and item response probabilities to examine the extent of polarization and multidimensionality among immigration attitudes.

LCA results

In Fig. 2, we show changes in the BIC across latent class models using one through ten classes calculated with the full sample spanning 2002 through 2010. Model fit improves with each additional class, as indicated by the decreasing BIC. However, there are differences between class specifications in levels of improvement. Three notable improvements in model fit are observed at the three, five, and ten-class model. As illustrated in Fig. 2, an elbow in the BIC is observed at the latent class model using three classes. Examining item response means and probabilities for the three-class solution in Table 2, we find that this model categorizes the sample into those who are pro-immigration (24%), anti-immigration (18%), and those who feel moderately (58%). In each class, individuals felt more positively about immigration's cultural impact than its effect on the economy, as indicated by the difference scores and Cohen's D reported in the bottom panel. Indeed, differences between these two indicators are nearly twice as large for the pro- and moderate classes compared to the anti-immigration class. Adjusting for sample

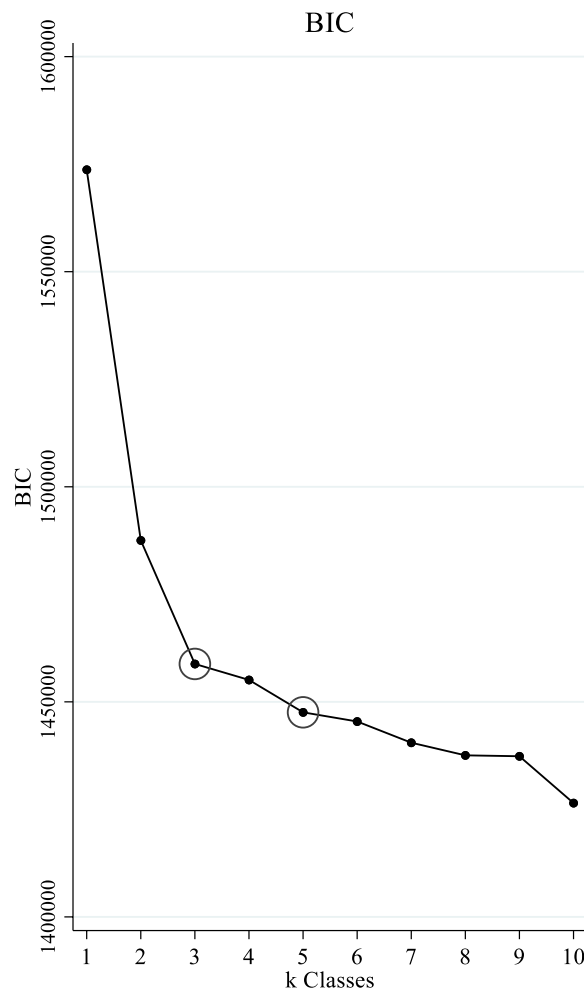


Fig. 2 BIC for latent class models with k classes. Selected classes circled

Table 2 Means and Item Response Probabilities for 3-Class LCA

	Latent Class		
	Pro-Immigration 24%	Moderate 58%	Anti-Immigration 18%
<i>Means (Continuous Outcomes)</i>			
Economy: Immigration is bad or good for the economy (0 = bad; 10 = good)	7.145	4.785	1.720
Culture: The country's cultural life is undermined or enriched by immigrants (0 = undermined; 10 = enriched)	7.890	5.458	2.112
<i>Item Response Probabilities (Categorical Outcomes)</i>			
Ethnic exclusion: Allow many or few immigrants of different race/ethnicity from majority			
Allow many	0.353	0.028	0.007
Allow some	0.550	0.456	0.083
Allow a few	0.089	0.450	0.428
Allow none	0.008	0.065	0.482
Differences Scores, Economy – Culture	-0.784	-0.764	-0.426
Cohen's D, Economy—Culture (absolute value)	0.432	0.390	0.227

Note: Results are weighted

sizes, Cohen’s D indicates a moderately large difference in between economic and cultural immigration views for pro- and moderate classes, alongside a small difference in the anti-immigration group.

Moving beyond the three-class model, there are two additional gains in model fit with the five- and ten-class solutions. To identify whether our characterization of immigration attitudes improves with additional classes, we first examine the five-class solution in Table 3. Building on the insights of a pro-, a moderate, and an anti-immigration profile from the three-class solution, the five-class model identifies a slight and strong ambivalent cluster. Whereas moderates in the three-class solution felt more positive about immigration’s cultural than economic impacts, moderates in the five-class solution now hold almost identical views on these issues (Cohen’s $D=0.076$). Differences between cultural and economic threat perceptions are minimal (Cohen’s $D=0.17$) for the anti-immigration class (12% of respondents), which was also the most likely to hold the greatest opposition toward the immigration of those who are a different ethnicity. We still observe greater support for immigration’s cultural benefits than economic contributions within the cluster holding pro-immigration attitudes (Cohen’s $D=0.30$), but these differences are smaller under the five-class solution.

The largest class to emerge from the five-class solution were slight ambivalents, representing 43% of respondents. Respondents in this cluster felt that immigration is better for cultural life (6.549) than for the economy (5.729). Cohen’s D measuring the size of the difference between these two indicators is 0.48, indicating a moderate difference that is substantially larger than that observed in the three-class solution (Cohen, 2013; Cutter, 2020). In regard to the economic component, slight ambivalents held views that were not substantively different from the midpoint on the measure of economic threat perceptions, while espousing more positive views toward the contributions

Table 3 Means and Item Response Probabilities for 5-Class LCA

	Latent Class				
	Pro	Moderate	Anti	Slight Ambivalent	Strong Ambivalent
	13%	29%	12%	43%	3%
<i>Means (Continuous Outcomes)</i>					
Economy: Immigration is bad or good for the economy (0 = bad; 10 = good)	7.976	4.183	1.240	5.729	1.554
Culture: The country’s cultural life is undermined or enriched by immigrants (0 = undermined; 10 = enriched)	8.500	4.194	1.546	6.549	6.714
<i>Item Response Probabilities (Categorical Outcomes)</i>					
Ethnic exclusion: Allow many or few immigrants of different race/ethnicity from majority					
Allow many	0.496	0.013	0.007	0.096	0.044
Allow some	0.420	0.280	0.077	0.625	0.233
Allow a few	0.070	0.575	0.369	0.262	0.458
Allow none	0.014	0.132	0.546	0.017	0.265
Differences Scores, Economy—Culture	-0.580	-0.076	-0.365	-0.906	-5.973
Cohen’s D, Economy – Culture	0.304	0.006	0.177	0.475	2.991

Note: Results are weighted

of immigration to national culture.² Notable differences also begin to emerge on the measure of ethnic exclusion. Slight ambivalents, were most likely to feel moderately tolerant and report that their government should “allow some” immigration from a different ethnicity, more in line with the pro-immigration class.

The strong ambivalent class is the smallest to emerge with three percent of respondents. These individuals held strongly contradictory perspectives, feeling that immigration hurts the economy (1.554), while also believing that it enriches cultural life (6.714).³ The difference between cultural and economic views are extremely large (Cohen's $D=2.99$). In terms of admitting immigration from different ethnic destinations, this class deviates from slight ambivalents. The most common response of strong ambivalents is the belief that they should allow a few.

The five-class solution offers several theoretical contributions to our understanding of immigration attitudes. First, it brings greater consistency in attitudes when examining the differenced scores and the Cohen's D for the pro, the anti, and moderate classes, while separating respondents into distinct classes for those substantially shifted in favor of the cultural benefits of immigration within the moderate class, when compared to the three-class model. Not only were the ambivalent classes the most shifted in favor of the cultural benefits from immigration when compared to the other classes, but nearly half (46%) of the sample was classified within these two clusters, suggesting that the most common configuration of attitudes may not fit neatly in a unidimensional framework. This is especially true for the strong ambivalent class. Instead, the profile of ambivalents' attitudes provides a core theoretical contribution of our study, indicating that economic and cultural concerns often function independently. Second, responses on ethnic exclusion bring additional insights. Response patterns of slight and strong ambivalents were concentrated in the middle categories (allow some/few). Despite similarities on the economic measures with moderates, slight ambivalents were much more likely to favor some ethnically different immigration than the latter group. While the strong ambivalent class was small, they are also theoretically interesting. First, they viewed immigration as adversely affecting the economy in ways that were similar to the anti-immigration cluster. However, they were substantially more willing to allow some (23.3%) or a few (45.8%) immigrants compared to the anti-immigration cluster. Combined, results on the ethnic exclusion measure for ambivalents suggest that respondents who are less culturally threatened by immigration are more amenable to allowing some form of ethnically diverse immigration.

From the five-class solution, improvements to model fit diminished substantially with additional classes. One exception is the ten-class solution where model fit improved from the nine-class model. Inspection of item response patterns revealed that this solution primarily differentiated attitude profiles based on levels of intensity, rather than adding substantive theoretical classifications. We therefore do not report on the ten-class solution and proceed with a focus on the five-class solution.

² Indicator means for cultural threat perceptions and economic threat perceptions were each significantly greater than the midpoint (5) in the slight ambivalent class, but the size of the difference from the midpoint was small for economic threat perceptions (Cohen's $D=.31$) and moderately large for cultural threat perceptions (Cohen's $D=.62$).

³ Differences from the midpoint were substantial for both indicators of cultural (Cohen's $D=.69$) and economic threat perceptions (Cohen's $D=1.45$).

Our application of LCA provided key insight to our first research question, indicating that immigration attitudes are multidimensional across aspects of realistic and symbolic threat perceptions. It also provided a key theoretical contribution by identifying ambivalent attitudes which demonstrate the independence of realistic and symbolic threat perspectives in individuals' views on immigration. In the next section, we examine our second research question exploring how these attitudinal configurations changed over time and in response to the Great Recession.

Longitudinal and cross-national variation in latent class membership, 2002 through 2010

Logistic regression models

To explore shifting attitudes over time, with respect to the Great Recession, and across varying country-level contexts, we conducted a series of hierarchical logistic regression models with an interrupted time series design and varying intercept to predict (1) the trajectory of immigration attitudes prior to the recession, (2) the discrete effect of the recession on immigration attitudes, (3) the trajectory of immigration attitudes after the recession, and (4) how country-level characteristics moderate these trends. Our basic approach is described in Eq. 1,

$$\ln\left(\frac{y_{ijt}}{1 - y_{ijt}}\right) = \gamma_{00} + \beta_1 t_{ij} + \beta_2 r_{ij} + \beta_3 t_{ij} r_{ij} + \lambda C_j + \lambda P_{ij} + \lambda N_j + U_{0j} + \varepsilon_{ij} \quad (1)$$

where y_{ijt} represents membership in one of the five latent classes. For each application of Eq. 1, we conducted five models to predict each class independently. We use this method because our latent classes violate the independence of irrelevant alternatives (IIA) assumption required for multinomial logistic regression (i.e., removing one class would influence relative membership probabilities for the remaining classes) (Cheng & Long, 2016; Long & Freese, 2014). Incorporating an interrupted time series approach to Eq. 1, t is a continuous variable for year with β_1 representing class membership trends prior to the recession. r is a categorical variable for the recession which started in 2008 and continued through 2010 (Gidron & Mijs, 2019), with β_2 representing the discrete change in latent class membership at the onset of the recession. Finally, tr is the interaction of year and recession, with β_3 estimating membership trends after the start of the recession from 2008 to 2010. In total, these three variables allow us to empirically model how the onset of the recession not only related to immediate shifts in immigration attitudes, but whether it also altered their short-term trajectories. As described above, our data consists of respondents clustered within 14 countries. To account for the clustering of respondents, Eq. 1 also includes a varying intercept which parses country-level residuals from the intercept (U_{0j}) from the individual-level error term (ε_{ij}).

To explore whether attitudinal trends are associated with country-level characteristics, we examine the role of countries' welfare state type and change in the unemployment rate, as contextual features which may shape how residents feel about immigration in response to the Great Recession. These variables are represented by C in Eq. 1. We measure welfare state classifications based on Esping-Andersen's (1990) identifications: Conservative, social democratic, liberal, or Mediterranean systems. Table 6 in Appendix reports countries associated with each welfare state. To measure the severity of the recession, we use a dichotomous measure capturing whether country-level unemployment rates rose more

than 2 percentage points from 2006 (prior to the recession) to 2010 (two years into the recession). We dichotomize unemployment growth to aid in interpretation of results, but substantive findings are similar if we use a continuous measure. In addition, our models control for several potential confounders of this measure, including annual unemployment rate, GDP per-capita, and GDP growth across each country-year (discussed below). Data for these items comes from the World Bank (WDI, 2020). We chose to focus on unemployment changes during the recession rather than other indicators (such as GDP) because unemployment has the most direct impact on residents. Results are similar when recession severity is measured by changes in GDP.

To examine whether these country-level characteristics are associated with attitudinal trends, we add an interaction between C and t , r , and tr in Eq. 1 to effectively determine whether pre-recession trends, discrete changes at the onset of the recession, and trends after recession onset vary by countries' welfare state type and change in unemployment. Because our data includes only 14 countries, we conducted independent models for each interaction to avoid concerns with multicollinearity.

Equation 1 includes two sets of controls often used in research on immigration attitudes (Hainmueller & Hiscox, 2007; Meuleman et al., 2009). At the respondent-level, P includes education (college/less than college),⁴ gender, immigration status, unemployment, and z-scored age. At the country-year level, N includes controls for GDP per capita, the unemployment rate, GDP growth (percent change from previous year), as well as the percentage of the population that is foreign born.⁵

Central to our analysis is the comparison of coefficients from before and after the onset of the recession. We report average marginal effects of independent variables on predicted probabilities of class membership rather than log odds or odds ratios (see Mood, 2010).

Individual covariates

Before examining attitudinal trajectories from 2002 to 2010, we first examine individual-level predictors of immigration attitudes using the baseline model described in Eq. 1. Marginal effects of individual-level predictors on latent class membership are illustrated in Fig. 3. We find that the college educated are more likely to hold both pro- and slight ambivalent attitudes, suggesting a more complex relationship between education and immigration attitudes, whereby education is associated with more supportive views, but particularly toward the cultural benefits of immigration. Unemployment predicts both anti- and strong ambivalent attitudes. For strong ambivalents, unemployment is association with opposition to immigration on economic grounds, but not on cultural bases, as is the case for the anti-immigration cluster. Non-immigrants were more likely to hold moderate or anti-immigration views, whereas immigrants more commonly held pro-immigration attitudes. The effects of gender and age were less pronounced in differentiating between clusters, although we do find that older respondents were more likely to hold anti or moderate immigration attitudes.

In Table 4, we present marginal effects for years leading to the recession, the onset of the recession, and the years following this onset on each of the five attitude

⁴ This dichotomous measure of education allowed for consistent measurement across countries which often have incomparable grade structures prior to tertiary-level schooling.

⁵ The foreign-born population came in 5-year intervals and was linearly interpolated to match ESS survey years.

Five-Class Solution

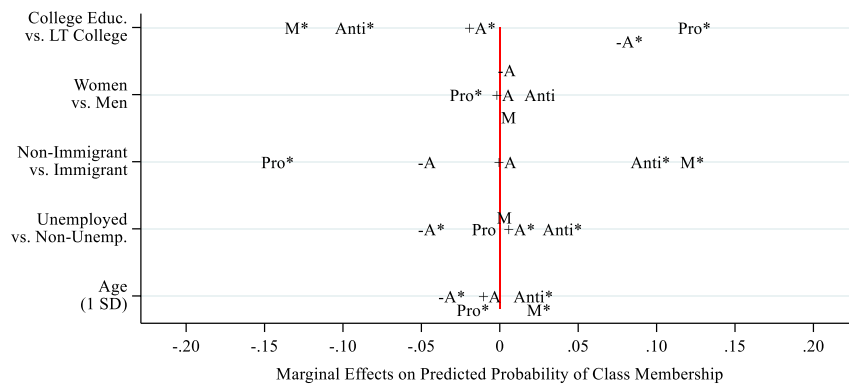


Fig. 3 Marginal effects of individual-level characteristics on probability of latent class membership. Note: Latent classes: Pro = Pro-immigration, M = Moderate, Anti = Anti-immigration; -A = Slight ambivalent, +A = Strong ambivalent. Plotted coefficients reflect marginal effects at means, calculated with independent logistic regression models predicting membership in each latent class identified in the five-class solutions using Equation 2. *p<.05 for significance of plotted marginal effect

Table 4 Marginal Effects on Predicted Probabilities of Latent Class Membership

A. Baseline						
	β Year, Prior to Recession (t)		β Onset of Recession (r)		β Year, After Onset of Recession (tr)	
Pro	-0.004		0.019		-0.005	
Moderate	0.002		-0.004		-0.003	
Anti	0.010***		-0.036***		0.001	
Slight Ambiv	-0.005		0.034*		0.001	
Strong Ambiv	-0.000		0.002		-0.006	
B. By Welfare State						
	β Year, Prior to Recession (t)		β Onset of Recession (r)		β Year, After Onset of Recession (tr)	
	Conserv	Social Dem	Conserv	Social Dem	Conserv	Social Dem
Pro	-0.005	-0.004	0.037**	0.045**	-0.011*	-0.009
Moderate	0.003	0.002	-0.027	-0.006	0.006	-0.002
Anti	0.010	0.003	-0.071***	-0.034*	0.007	0.002
Slight Ambiv	-0.004	0.001	0.054*	0.016	-0.007	-0.001
Strong Ambiv	-0.002	-0.002	0.004	-0.001	-0.001	-0.006
	β Year, Prior to Recession (t)		β Onset of Recession (r)		β Year, After Onset of Recession (tr)	
	Lib	Medit	Lib	Medit	Lib	Medit
Pro	0.011	-0.000	-0.041	0.007	-0.010	-0.007
Moderate	-0.004	0.002	0.051	0.005	-0.024***	-0.008
Anti	0.003	0.002	-0.023	-0.026	0.012*	-0.004
Slight Ambiv	-0.003	-0.006	0.005	0.026**	-0.002	0.007
Strong Ambiv	-0.003***	0.001	0.023	-0.004	-0.011	-0.007
C. By Unemployment Change 2006–2010						
	β Year, Prior to Recession (t)		β Onset of Recession (r)		β Year, After Onset of Recession (tr)	
	Low Un. Growth	High Un. Growth	Low Un. Growth	High Un. Growth	Low Un. Growth	High Un. Growth
Pro	-0.008*	0.002	0.040**	-0.003	-0.009	0.001
Moderate	0.005	-0.001	-0.022*	0.020	0.005	-0.019
Anti	0.010**	0.009	-0.037***	-0.029*	0.003	-0.027**
Slight Ambiv	-0.005	-0.004	0.041*	0.019	-0.004	0.010
Strong Ambiv	-0.000	-0.000	0.002	0.004	-0.003	-0.020

Note: Coefficients are average marginal effects from Eq. 1 for baseline models (A), with added interactions of trend and recession with welfare state type, & unemployment respectively. *p < .05; **p < .01; ***p < .001 (Two-tailed tests)

configurations. The first panel provides baseline results that did not include interactions with country-level characteristics. As marginal effects estimate changes in predicted probabilities, we visualize them by plotting predicted probabilities of class membership in Fig. 4. Solid lines and dots in Fig. 4 represent significant marginal effects ($p < 0.05$), while dashed lines and hollow dots pertain to non-significant effects.

Overall, the baseline models reveal that the recession coincided with discrete change in immigration attitudes. In the years leading to the recession, immigration attitudes were relatively stable with the exception of growing anti-immigration sentiment ($p < 0.001$) (Table 4; row three; column one). This is exemplified by the solid line with filled dots for the anti-immigration class (panel three) in Fig. 4. The onset of the recession in 2008 is associated with a drop in the prevalence of the anti-immigration ($p < 0.001$) (Table 4; row three; column two), alongside an increase in slight

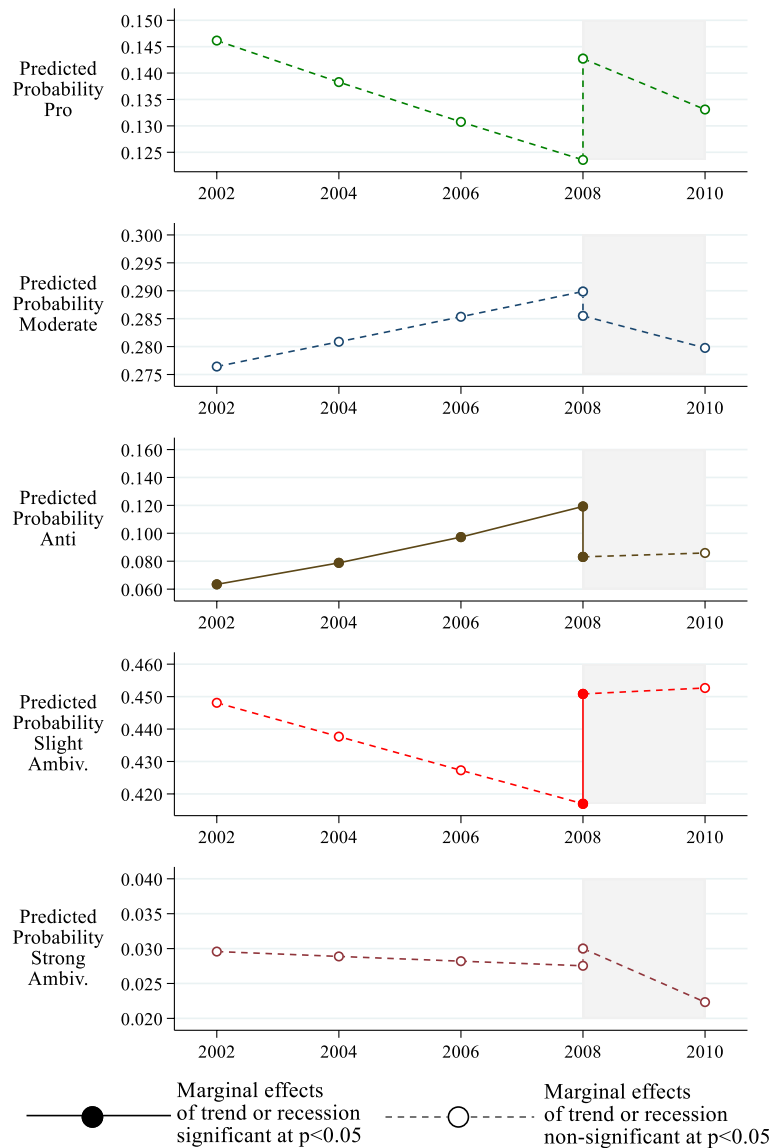


Fig. 4 Baseline change in probability of latent class membership by year and recession

ambivalent views ($p < 0.01$) (Table 4; row four; column two). This suggests that the start of the recession coincided with an increase in ambivalent views rather than purely anti-immigration attitudes. In other words, economic concerns about immigration remained with the looming economic crisis, but feelings of symbolic threat abated with a growing share of individuals feeling that immigration had cultural benefits, even while their economic concerns remained.

To examine whether these patterns differ by country-level characteristics, we first explore varying trajectories by countries' welfare system. Figure 5 and panel B in Table 4 report marginal effects for each trend point across conservative, social democratic, liberal, and Mediterranean welfare systems. In general, we found that the recession is associated with an increased prevalence of positive immigration attitudes in countries with a stronger social safety net, and more negative or ambivalent views in countries with

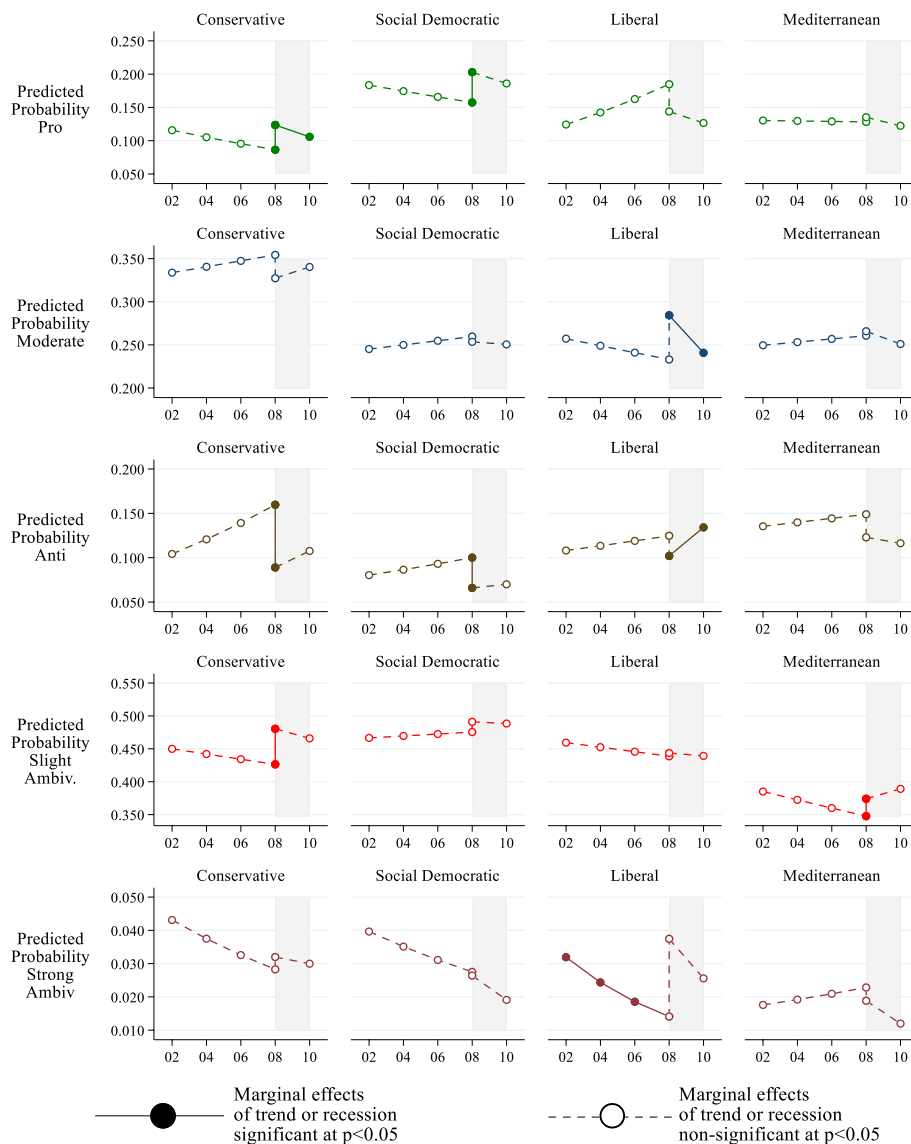


Fig. 5 Change in probability of latent class membership by welfare state

fewer social supports. The onset of the recession corresponded to an increase in pro-immigration attitudes in social democratic countries that have the most robust social safety net of all European nations ($p < 0.01$). In Fig. 5, this corresponds to a solid vertical line with filled dots. In countries with conservative welfare regimes focused on worker protections, the recession is associated with a significant reduction in anti-immigration ($p < 0.001$) attitudes, alongside growth in pro- ($p < 0.01$) and slight ambivalent views ($p < 0.05$).

In contrast to social democratic and conservative countries with greater public support, countries with liberal welfare systems that provide limited social safety nets also experienced a shift in immigration attitudes with the recession. Prior to the recession, immigration attitudes were relative stable in liberal welfare states, with the exception of a general decline in strong ambivalent views ($p < 0.01$). Following the recession, we find that residents of these countries became less likely to hold moderate views ($p < 0.001$) and more likely to hold anti-immigration perspectives ($p < 0.05$). In states with Mediterranean welfare systems, we observe a significant increase in slight ambivalent views with the onset of the recession ($p < 0.01$), pointing to greater relative concerns surrounding the economic, rather than the cultural impact of immigration.

These findings suggest that public benefits protect against growing realistic threat perceptions during periods of financial crises. To examine how the severity of the Great Recession corresponded to shifting immigration attitudes, we report the relationship with unemployment during the recession in Fig. 6, as well as in panel C in Table 4. In general, we find that countries less affected by the economic crisis had a significant decrease in the anti-immigration ($p < 0.001$) and moderate ($p < 0.05$) cluster at the onset of the recession. These shifts occurred alongside growing pro-immigration ($p < 0.01$) and slight ambivalent ($p < 0.05$) attitudes.

Coinciding with these trends, countries where the recession had a greater economic impact in 2008 and 2010 had more stable attitudinal trends, conditional on covariates in our model. One exception is the decline in anti-immigration attitudes at the onset and following the recession for countries with high unemployment ($p < 0.05$). This shift appears to have occurred alongside an increase in slight ambivalent attitudes, however, the effect was non-significant. These findings suggest that the recession's direct economic impacts, particularly on unemployment, had a relatively muted effect on individuals' attitudes. Even in the face of rising unemployment, public sentiment toward immigrants' cultural contributions grew more positive, while concerns about their economic impact remained relatively unchanged.

Robustness analysis using difference scores

In the results above, we used the attitudinal groups identified with LCA to examine shifting views toward immigration with respect to the recession. To examine whether results were sensitive to this specification, we conducted an additional set of interrupted time series models predicting difference scores calculated by subtracting respondents' reported level of realistic threat perceptions from their reported level of symbolic threat perceptions. Higher scores on this measure indicate that respondents were more supportive of immigration's economic contributions than their cultural contributions. Lower or negative scores reflect the converse. While the five-class

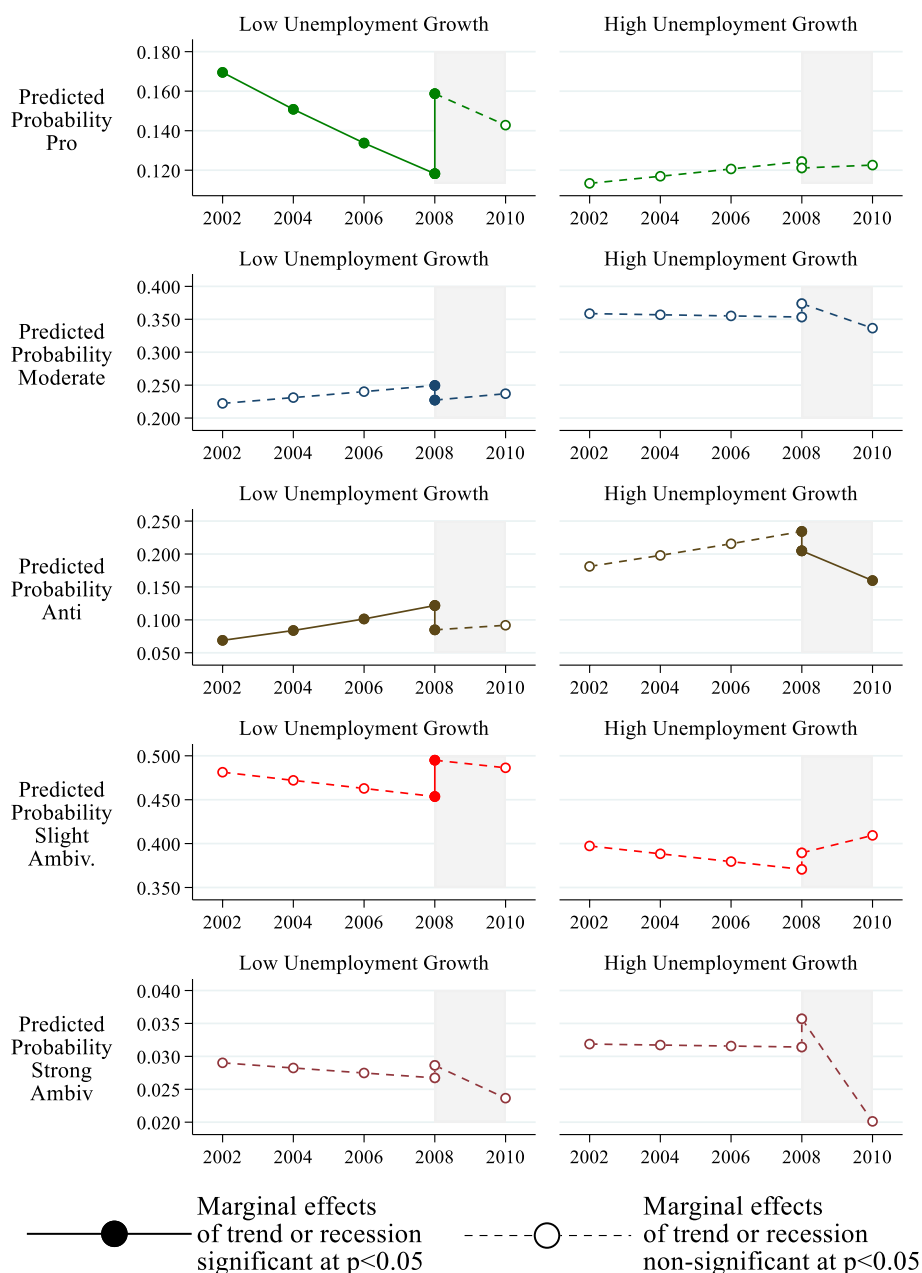


Fig. 6 Change in probability of latent class membership by nation's change in unemployment rate during the recession (2006 to 2010)

solution brought more consistency in response patterns than the three-class configuration, it was still more common for respondents to have a negative difference score reflecting greater support for immigration on cultural than economic grounds (Table 3). We use these difference scores in a set of interrupted time series models that follow the same strategy outlined in Eq. 1. We focus on the change in difference scores with the recession, as well as across country-level characteristics.

Results of our robustness test are reported in Table 5. Consistent with earlier findings, Table 5 reports that the onset of the recession was associated a decrease in the difference score indicating a divergence in attitudes where support was greater on cultural than economic grounds ($p < 0.05$). This difference subsided somewhat in the years following the start of the recession ($p < 0.01$). Across welfare state types, we find that difference scores were increasing in the years prior to the recession in countries with liberal systems, but this trend stopped in 2008 when the recession began. Difference scores decreased in countries with Mediterranean systems at the onset of the recession ($p < 0.05$) and grew somewhat in the following years ($p < 0.05$). Lastly, we find that countries where unemployment rose dramatically during the recession experienced an initial decrease in difference scores with the onset of the recession ($p < 0.05$), followed by an increase in following years. Collectively, these patterns confirm the results that measured attitudes with latent classes, showing that the recession did not universally impact immigration attitudes. Instead, views toward immigrants' cultural impact continued to grow more positive, while economic concerns remained.

Table 5 Marginal effects on predicted difference scores for measure of economic—cultural immigration attitudes

		A. Baseline					
		β Year, Prior to Recession (<i>t</i>)		β Onset of Recession (<i>r</i>)		β Year, After Onset of Recession (<i>tr</i>)	
Differences Scores, Economy – Culture		0.009		-.152*		0.089**	
		B. By Welfare State					
		β Year, Prior to Recession (<i>t</i>)		β Onset of Recession (<i>r</i>)		β Year, After Onset of Recession (<i>tr</i>)	
		Conserv	Social Dem	Conserv	Social Dem	Conserv	Social Dem
Differences Scores, Economy – Culture		0.019	0.005	-0.045	0.093	0.046	0.064
		C. By Unemployment Change 2006–2010					
		β Year, Prior to Recession (<i>t</i>)		β Onset of Recession (<i>r</i>)		β Year, After Onset of Recession (<i>tr</i>)	
		Low Un. Growth	High Un. Growth	Low Un. Growth	High Un. Growth	Low Un. Growth	High Un. Growth
Differences Scores, Economy – Culture		0.050	0.037	-0.110	-0.258*	0.014	0.132***

Note: Coefficients are marginal effects from Eq. 1 for baseline models (A) using difference scores, with added interactions of trend and recession with economy size and welfare state type for B and C, respectively

Discussion and conclusion

Threat literatures and studies of immigration attitudes commonly assume that different dimensions of threat perceptions are correlated in similar ways (Ceobanu & Escandell, 2010). In this paper, we test this underlying assumption by examining how respondents blend attitudes in respects to the economic, cultural, and ethnic prejudice components related to immigration. Applying LCA to three widely used variables measuring separate aspects of immigration attitudes, we uncover several findings that expand our understanding of threat perceptions highlight the presence of multidimensionality in these views.

First, across different class solutions (3- and 5-class) and across different clusters (pro-through strong ambivalent clusters), we find that respondents, on average, typically favor immigration's cultural impact over its impact on the economy. These findings are supported by mean and item response probabilities (the cultural item has greater average scores than the economic item) and differences scores between the economy and culture indicators (all negative) across all clusters we examined.

Second, drawing on LCA results from the five-class solution that provides greater consistency in the pro, moderate, and anti-immigration clusters, we also identify two types of theoretically rich clusters related to a slight and strong form of ambivalence. Overall, these clusters demonstrate that the economic and the cultural concerns over immigration can shift independently, but for these two groups specifically, that shift in favor of the cultural benefits from immigration is substantially more pronounced compared to the pro, moderate, and anti-immigration cluster. Indeed, the difference scores, as well as the Cohen's *D* measure is substantially larger for these two groups (Table 3), relative to other clusters. Our identification of ambivalent immigration attitudes constitutes a key theoretical contribution of our study by highlighting the independence of realistic and symbolic threat perspectives within individuals' attitudes toward immigration. By and large, our findings suggest that individuals hold more complicated views toward immigration than commonly acknowledged. Many feel positively about immigration in some respects, particularly its cultural contributions, while holding concerns about its economic impact.

While threat related studies have often treated attitudes as unidimensional (Ceobanu & Escandell, 2010), our findings suggest stronger connections between the cultural and ethnic prejudice dimensions than previously thought. Those that viewed immigration's cultural impact more positively, were more likely to approve of ethnically diverse immigration. For instance, although the anti-immigration cluster and strong ambivalent cluster share nearly identical mean scores on the economic measure, strong ambivalents were much more likely to allow immigration from ethnically different destinations than the anti-immigration cluster. Similar parallels exist when comparing the moderate to the slight ambivalent cluster. Although we do not specifically focus on the causal relationship between views toward immigration's impact and individuals' policy attitudes on racial exclusion, our findings do shed some initial light on these relationships. Specifically, they suggest that symbolic threat may have a greater impact on racial/ethnic policy attitudes than economic threat. In other words, those that are less culturally threatened by immigration, are more likely to also be comfortable with ethnically diverse immigration regardless of their feelings of realistic threat.

Identifying dynamic configurations of immigration attitudes allowed us to shed new insight on how these views have changed with respect to the Great Recession across

countries and over time. When accounting for the intersection between spatial and temporal patterns, we find a more complicated picture. The Great Recession primarily corresponded to an increase in slight ambivalent perspectives, suggesting that the financial crisis did not trigger universal opposition to immigration. Instead, positive sentiment toward immigration's cultural impact grew, while economic concerns remained. These patterns existed regardless of how rates of unemployment grew within countries during the recession, indicating that direct county-level economic changes were less consequential in shaping immigration attitudes than broader concerns around the global economy.

Overarchingly, these temporal patterns perhaps suggest that shifting norms that increasingly value diversity place a higher premium on the value of immigration to national culture, while also further eschewing admissions based on ethnicity, particularly during the recession. Yet, under periods of economic uncertainty, economic concerns remain, but not at the expense of valuing immigration's contribution to national culture.

Examining these longitudinal trends with respect to differences in welfare systems revealed that generous social safety nets found in social democratic countries sustain pro-immigration attitudes even during economic crisis, while anti- and ambivalent perspectives prevail under conditions of more restrictive public benefits. From a policy perspective, these results suggest that the social impact of immigration may be blunted by more expansive state policies that facilitate broader political support by mitigating concerns among the most economically vulnerable to immigration.

Our focus on the Great Recession provides one example of how a global shock relates to immigration attitudes. It is quite possible, however, that our findings are particular to economic downturns, leaving the prospect that other types of global shocks, such as the European refugee crisis and the COVID-19 pandemic, can have different effects. As the impact of the COVID-19 crisis becomes clearer, we believe future research may benefit from taking our theoretical and methodological approach in incorporating multidimensionality in immigration attitudes, evaluating how configurations potentially shift in response to global crises, and how differences in national context intersect with global crises.

Yet, given that threat perception processes are dynamic in nature, a key shortcoming of this study and many others that utilize cross-national data is that we do not utilize true panel data at the individual level. The ESS utilizes repeated samples of different individuals and is often limited to a core group of European countries with mature welfare systems in place. The relatively limited number of countries represented over a short time horizon presents challenges related to limited variation, internal validity, and generalizability as international migration is increasingly occurring in middle income countries in Eastern Europe (UN Population Division 2013). It remains unclear whether threat perception theories that have predominantly been applied to English-speaking settler countries and Western Europe translate well to newer EU member countries, or whether potentially other confounding country level factors explain the association we observe with the interrupted time series design. We ask that readers bear these limitations in mind when interpreting results.

Appendix

Table 6 Welfare state regimes by country

Liberal	Conservative	Social democratic	Mediterranean
Great Britain, Ireland	Belgium, Germany, France, the Netherlands, Switzerland	Denmark, Finland, Norway, Sweden	Greece, Spain, Portugal

Note. Classifications based on Esping-Andersen's (1990) identifications

Acknowledgements

Not applicable.

Authors' contributions

Ronald Kwon and William Scarborough contributed equally as equal authors. All authors read and approved the final manuscript.

Funding

Not applicable.

Availability of data and materials

Data is available from the European Social Survey (www.europeansocialsurvey.org). Other materials are available upon request.

Declarations

Competing interests

Not applicable.

Received: 25 April 2023 Accepted: 4 April 2024

Published online: 29 April 2024

References

- Bail, C. A. (2008). The configuration of symbolic boundaries against immigrants in Europe. *American Sociological Review*, 73(1), 37–59. <https://www.jstor.org/stable/25472513>.
- Bellovary, A., Armenta, A. D., & Reyna, C. (2020). Stereotypes of immigrants and immigration in the United States. In J. T. Nadler & E. C. Voyles (Eds.), *Stereotypes: The Incidence and Impacts of Bias* (pp. 146–64). ABC-CLIO.
- Biegert, T., & Ebbinghaus, B. (2022). Accumulation or absorption? Changing disparities of household non-employment in Europe during the great recession. *Socio-Economic Review*, 20(1), 141–168. <https://doi.org/10.1093/ser/mwaa003>
- Billiet, J., Meuleman, B., & De Witte, H. (2014). The Relationship between ethnic threat and economic insecurity in times of economic crisis: analysis of European social survey data. *Migration Studies*, 2(2), 135–161. <https://doi.org/10.1093/migration/mnu023>
- Blalock, H. M., Jr. (1967). *Toward a theory of minority-group relations*. Wiley.
- Bloom, P. B., Arikian, G., & Lahav, G. (2015). The effect of perceived cultural and material threats on ethnic preferences in immigration attitudes. *Ethnic and Racial Studies*, 38(10), 1760–1778. <https://doi.org/10.1080/01419870.2015.1015581>
- Blumer, H. (1958). Race prejudice as a sense of group position. *The Pacific Sociological Review*, 1, 3–7.
- Callens, M.-S., & Meuleman, B. (2016). Do integration policies relate to economic and cultural threat perceptions? A Comparative Study in Europe. *International Journal of Comparative Sociology*, 58(5), 367–391. <https://doi.org/10.1177/002071521666654>
- Ceobanu, A. M., & Escandell, X. (2010). Comparative analyses of public attitudes toward immigrants and immigration using multinational survey data: A review of theories and research. *Annual Review of Sociology*, 36(1), 309–328. <https://doi.org/10.1146/annurev.soc.012809.102651>
- Cheng, S., & Scott Long, J. (2016). Testing for IIA in the multinomial logit model. *Sociological Methods & Research*, 35(4), 583–600. <https://doi.org/10.1177/0049124106292361>
- Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. Academic.
- Cutter, G. (2020). Effect size or statistical significance, where to put your money. *Multiple sclerosis and related disorders*, 38, 101490. <https://doi.org/10.1016/j.msard.2019.101490>
- Dennison, J., & Geddes, A. (2021). Thinking globally about attitudes to immigration: Concerns about social conflict, economic competition and cultural threat. *The Political Quarterly*, 92(3), 541–551. <https://doi.org/10.1111/1467-923X.13013>
- Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. Princeton University Press.
- Fink, J. J., & Brady, D. (2020). Immigration and preferences for greater law enforcement spending in rich democracies. *Social Forces*, 98(3), 1074–1111. <https://doi.org/10.1093/sf/soz024>

- Genge, E., & Bartolucci, F. (2022). Are attitudes toward immigration changing in Europe? An analysis based on latent class IRT models. *Advances in Data Analysis and Classification*, 16, 235–271. <https://doi.org/10.1007/s11634-021-00479-y>
- Gidron, N., & Mijs, J. J. B. (2019). Do changes in material circumstances drive support for populist radical parties? Panel data evidence from the Netherlands during the great recession, 2007–2015. *European Sociological Review*, 35(5), 637–650. <https://doi.org/10.1093/esr/jcz023>
- Giesselmann, M., David B., Tabea N. (2021). The social consequences of the increase in refugees to Germany 2015–2016. *WZB Discussion Paper*, 2021–502.
- Goldman, S. K., & Hopkins, D. (2020). Past place, present prejudice: The impact of adolescent racial context on White racial attitudes. *Journal of Politics*, 82(2), 529–542.
- Gorodzeisky, A. (2011). Who are the Europeans that Europeans prefer? Economic conditions and exclusionary views toward European immigrants. *International Journal of Comparative Sociology*, 52(1–2), 100–113. <https://doi.org/10.1177/0020715210377158>
- Gorodzeisky, A., & Semyonov, M. (2019). Unwelcome immigrants: Sources of opposition to different immigrant groups among Europeans. *Frontiers of Sociology*, 4, 1–10. <https://doi.org/10.3389/fsoc.2019.00024>
- Green, E. G. T. (2007). Guarding the gates of Europe: a typological analysis of immigration attitudes across 21 countries. *International Journal of Psychology*, 42(6), 365–379. <https://doi.org/10.1080/00207590600852454>
- Hainmueller, J., & Hiscox, M. J. (2007). Educated preferences: Explaining attitudes toward immigration in Europe. *International Organization*, 61(2), 399–442. <https://doi.org/10.1017/S0020818307070142>
- Heath, A. F., & Richards, L. (2020). Contested boundaries: Consensus and dissensus in European attitudes to immigration. *Journal of Ethnic and Migration Studies*, 46(3), 489–511. <https://doi.org/10.1080/1369183X.2018.1550146>
- Hiers, W., Soehl, T., & Wimmer, A. (2017). National trauma and the fear of foreigners: How past geopolitical threat heightens anti-immigration sentiment today. *Social Forces*, 96(1), 361–388. <https://doi.org/10.1093/sf/sox045>
- Igarashi, A. (2020). Threats and norms: multicultural policies and natives' attitudes towards immigrants. *Sociological Quarterly*, 63(3), 426–448. <https://doi.org/10.1080/00380253.2020.1860724>
- Korpi, W., & Palme, J. (2003). New politics and class politics in the context of austerity and globalization: Welfare state regress in 18 Countries, 1975–95. *American Political Sciences Review*, 97(3), 425–446. <https://doi.org/10.1017/S0003055403000789>
- Kunovich, R. M. (2002). Social structural sources of anti-immigrant prejudice in Europe. *International Journal of Sociology*, 32(1), 39–57. <https://doi.org/10.1080/15579336.2002.11770243>
- Kwon, R., & Curran, M. (2016). Immigration and support for redistributive social policy: Does multiculturalism matter? *International Journal of Comparative Sociology*, 57(6), 375–400. <https://doi.org/10.1177/0020715216685767>
- Kwon, R., & Hughes, E. (2018). Multiculturalist policies in an age of immigration: Do multiculturalist policies influence negative immigrant attitudes toward homosexuality? *Ethnicities*, 18(5), 655–691. <https://doi.org/10.1080/15579336.2002.11770243>
- Kwon, R., Mahutga, M. C., & Admire, A. (2017). Promoting patriarchy or dual equality? *Multiculturalism and the Immigrant Household Division of Labor*, *Sociological Quarterly*, 58(3), 373–404. <https://doi.org/10.1080/00380253.2017.1331416>
- Kwon, R., Scarborough, W. J., & Faglie, T. (2022). Exclusionary attitudes toward immigrants: Globalization and configurations of ascribed and achieved status across 14 European countries. *International Journal of Comparative Sociology*, 63(4), 155–183. <https://doi.org/10.1177/00207152221094562>
- Kwon, R., Scarborough, W. J., & Taylor, C. (2023). Multidimensional attitudes: Homonationalist and selective tolerance toward homosexuality and Muslim migration in 21 countries. *Ethnicities*, 23(2), 331–366. <https://doi.org/10.1177/14687968221078345>
- Lee, T. L., & Fiske, S. T. (2006). Not an outgroup, not yet an ingroup: Immigrants in the stereotype content model. *International Journal of Intercultural Relations*, 30(6), 751–768. <https://doi.org/10.1016/j.ijintrel.2006.06.005>
- Long, J. S., & Freese, J. (2014). *Regression models for categorical dependent variables using stata* (3rd ed.). Stata Press.
- Lucassen, G., & Lubbers, M. (2012). Who fears what? Explaining far-right-wing preference in Europe by distinguishing perceived cultural and economic ethnic threats. *Comparative Political Studies*, 45(5), 547–574. <https://doi.org/10.1177/0010414011427851>
- Magidson, J., & Vermunt, J. K. (2003). Comparing latent class analysis with the traditional approach in data mining. In H. Bozdogan (Ed.), *Statistical data mining and knowledge discovery* (pp. 373–383). Chapman & Hall/CRC.
- Mayda, A. M. (2006). Who is against immigration? A cross-country investigation of individual attitudes towards immigrants. *The Review of Economics and Statistics*, 88(3), 510–530. <https://doi.org/10.1162/rest.88.3.510>
- Mazurek, J. (2016). The evaluation of recession magnitudes in EU countries during the great recession 2008–2010. *Review of Economic Perspectives*, 16(3), 231–244. <https://doi.org/10.1515/revecp-2016-0014>
- McLaren, L. M. (2003). Anti-immigrant prejudice in Europe: Contact, threat perception, and preferences for the exclusion of migrants. *Social Forces*, 81(3), 909–936. <https://muse.jhu.edu/article/40882>
- Meuleman, B., Davidov, E., & Billiet, J. (2009). Changing attitudes toward immigration in Europe, 2002–2007: A dynamic group conflict theory approach. *Social Science Research*, 38(2), 352–365. <https://doi.org/10.1016/j.ssresearch.2008.09.006>
- Moberg, S. P., Krysan, M., & Christianson, D. (2019). The polls—trends: racial attitudes in America. *Public Opinion Quarterly*, 83(2), 450–471. <https://doi.org/10.1093/poq/nfz014>
- Mood, C. (2010). Logistic regression: Why we cannot do what we think we can do, and what we can do about it. *European Sociological Review*, 26(1), 67–82. <https://doi.org/10.1093/esr/jcp006>
- O'Connell, H. A., & Raker, E. J. (2018). Converging or diverging: Shifting ethnoracial composition and the urban-suburban distinction in attitudes toward immigrants in Houston, 1995–2016. *Sociological Perspectives*, 61(4), 573–591. <https://doi.org/10.1177/0731121417741863>
- Organisation for Economic Co-operation and Development (OECD). (2010). *OECD Labor Force Statistics*. OECD.
- Pereira, C., Vala, J., & Costa-Lopes, R. (2010). From prejudice to discrimination: The legitimizing role of perceived threat in discrimination against immigrants. *European Journal of Social Psychology*, 40(7), 1231–1250. <https://doi.org/10.1002/ejsp.718>

- Pettigrew, T. F. (1998). Reactions toward the new minorities of Western Europe. *Annual Review of Sociology*, 24, 77–103. <https://doi.org/10.1146/annurev.soc.24.1.77>
- Quillian, L. (1995). Prejudice as a response to perceived group threat: Population composition and anti-immigrant and racial prejudice in Europe. *American Sociological Review*, 60(4), 586–611.
- Reyna, C., Dobria, O., & Wetherell, G. (2013). The complexity and ambivalence of immigration attitudes: Ambivalent stereotypes predict conflicting attitudes toward immigration policies. *Cultural Diversity and Ethnic Minority Psychology*, 19(3), 342–356. <https://doi.org/10.1037/a0032942>
- Roosma, F., van Oorschot, W., & Gelissen, J. (2014). The preferred role and perceived performance of the welfare state: European welfare attitudes from a multidimensional perspective. *Social Science Research*, 44, 200–210. <https://doi.org/10.1016/j.ssresearch.2013.12.005>
- Scarborough, W. J., Sin, R., & Risman, B. (2019). Attitudes and the stalled gender revolution: Egalitarianism, traditionalism, and ambivalence from 1977 through 2016. *Gender & Society*, 33(2), 173–200.
- Scheve, K. F., & Slaughter, M. J. (2001). Labor market competition and individual preferences over immigration policy. *The Review of Economics and Statistics*, 83(1), 133–145. <https://doi.org/10.1162/003465301750160108>
- Schmidt, K. (2021). The dynamics of attitudes toward immigrants: Cohort analyses for Western EU member states. *International Journal of Comparative Sociology*, 62(4), 281–310. <https://doi.org/10.1177/00207152211052582>
- Stephan, C. W., Stephan, W. G., Demitrakos, K. M., MarieYamada, A., & Clason, D. L. (2000). Women's attitudes toward men: An integrated threat theory analysis. *Psychology of Women Quarterly*, 24, 63–73. <https://doi.org/10.1111/j.1471-6402.2000.tb01022.x>
- Trauner, F. (2016). Asylum policy: The EU's 'Crisis' and the looming policy regime failure. *Journal of European Integration*, 38(3), 311–325. <https://doi.org/10.1080/07036337.2016.1140756>
- Tuch, S. A., & Hughes, M. (2011). Whites' racial policy attitudes in the twenty-first century: the continuing significance of racial resentment. *ANNALS, AAPSS*, 634, 134–152. <https://doi.org/10.1177/0002716210390288>
- United Nations Population Division (UNPD). (2013). *International Migration and Development Report 2013*. UN Publishing.
- Wilkes, Rima, Guppy, Neil, & Farris, Lily. (2008). 'No thanks, we're full': Individual characteristics, national context, and changing attitudes toward immigration. *International Migration Review*, 42(2), 302–329. <https://www.jstor.org/stable/27645253>.
- World Development Indicators (WDI). 2020. *World Bank World Development Indicators Database*. Retrieved July 2020. <https://datacatalog.worldbank.org/dataset/world-development-indicators>.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.