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### Regional International Organizations and Individual Immigration Attitudes: Results from Finite Mixture Models

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# **Regional International Organizations and Individual Immigration Attitudes: Results from Finite Mixture Models**

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*When are individuals more likely to support immigration? We suggest here that regional international organizations (IOs; for example, the European Union) publicly release reports about the scale and benefits of immigration to member states in the region in which these IOs operate. We argue that unlike individuals who are uninformed about immigration, informed individuals who have more knowledge of the main regional IO in which their country participates will be more likely to employ immigration reports released by their regional IO to construct their immigration attitudes. They will also perceive that these reports are credible. The credibility of these reports helps individuals with more knowledge about their region's main IO to view immigrants favorably, which translates to support for immigration. We test our prediction by developing a finite mixture model that statistically accounts for the econometric challenges that emerge when uninformed individuals "save face" by disproportionately opting for the middle "status quo" category in ordinal survey response variables of immigration support. Results from the finite mixture model corroborate our prediction and are more reliable than estimates from a standard ordered probit model.*

**KEYWORDS** *finite mixture models, individual immigration attitudes, regional international organizations*

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The politics of immigration often dominate newspaper headlines around the globe. It is therefore not surprising that a growing body of research explores *when* individuals in countries are more likely to support or oppose immigration. Much of this research studies how economic or noneconomic factors influence individual support for immigration. Noneconomic accounts analyze, for instance, how perceptions of immigrants as a “cultural” or social threat affect individual attitudes toward immigration (Sides and Citrin 2007). Economic accounts examine how individual support for immigration is influenced by their skill (that is, educational) level of education or concerns about the fiscal burden on public service posed by immigrants (Borjas 1999; Goldstein and Peters 2014; Hainmueller and Hiscox 2006, 2010; Hanson, Scheve and Slaughter 2007; Mayda 2006; Milner and Tingley 2012; Scheve and Slaughter 2001). These have been statistically tested via survey experiments or survey-response data sets on individual attitudes toward immigration (Goldstein and Peters 2014; Hainmueller and Hiscox 2006, 2010; Malhotra, Mo, and Margalit 2013; Mayda 2006; Milner and Tingley 2012; Scheve and Slaughter 2001). While results from these statistical tests have not reached any consensus, some key empirical studies report that economic factors such as education are powerful predictors of individual support for immigration (Hainmueller and Hiscox 2006; Mayda 2006; Milner and Tingley 2012; Scheve and Slaughter 2001).

Existing studies of immigration attitudes provide rich theoretical and empirical insights on when individuals tend to support immigration. Yet economic theories of immigration attitudes in international political economy (IPE) pay relatively less attention to the possibility that individuals—this also includes individuals that are well informed about immigration issues—do not fully comprehend the potentially “complex impact” of immigration. As a result, these studies have not adequately accounted for the likelihood that individuals may rely on “exogenous” sources of information about immigration (from political elites for example) to not only develop their knowledge about immigration-issues and construct their immigration attitudes (since immigration is a complex issue) but to also respond to survey questions that measure their support for immigration (Brader, Valentino, and Suhay 2008). This particular lacuna in the IPE literature on immigration preferences is puzzling.

This is because scholars of American public opinion have long recognized that citizens use information about the impact of immigration stemming from the media or political elites to develop their opinion about immigration (Brady and Sniderman 1985; Kinder 1998). Case-study research by comparativists on immigration politics has also documented that individual citizens are often unable to judge the “consequences of migration for society as a whole or for particular groups” (Freeman 1995:3). They thus attempt to learn about immigration from domestic parties, for instance (Freeman 1995, 2005; Segal, Elliot, and Mayadas 2010).

This article is motivated by extant research mentioned previously that evaluates how individual citizens use domestic sources of information about immigration to develop their attitudes about immigration (Segal, Elliot, and Mayadas 2010). However, this study departs from existing research—that focuses on the effect of *domestic* sources of immigration information on immigration preferences—in that we examine how “publicly released” information about immigration from international institutions, in particular *regional international organizations* (for example, the EU, ASEAN), influences immigration attitudes. More specifically, we first present a theoretical story that explores how public reports about immigration provided by regional international organizations influence the immigration attitudes of individuals in countries that are members of these regional international organizations (IOs). The main hypothesis that emerges from our theoretical story is that individuals with more knowledge of their region’s main IO—in other words, the main regional IO in which their country participates as a member—are more likely to support immigration. The causal intuition that leads to this prediction is as follows.

To begin with, we suggest that regional IOs are often formally obliged via treaties that bind member states in the region in which these IOs operate to publicly provide data and reports about the scale and effect of immigration on these member states. Details about these immigration issues released by each regional IO are in fact obtained, analyzed, and reported by committees (in the IO) that consist of independent “experts” (for example, academics, immigration lawyers) on immigration who are politically autonomous. We show subsequently that these reports released by experts in regional IOs emphasize the benefits of immigration to member states in the region under the respective IO’s jurisdiction *and* reveal that the size of immigration inflows to these member states is low. We then argue that *informed individuals*—who we claim have a more “cosmopolitan worldview”—are likely to have sufficient knowledge of their region’s main respective IO. As a result, these individuals will be aware that their regional IO’s immigration report is developed by experts and will use such reports to construct their immigration attitude. Building on this, we claim that these individuals will perceive that the findings contained in their regional IO’s report on immigration is *credible* precisely because they recognize that these findings are analyzed by politically autonomous experts. The credibility of these reports helps individuals who know more about their region’s respective IO to develop a more favorable view of immigrants, which translates to a higher likelihood of support for immigration.

We test our hypothesis by employing the International Social Survey Programme–National Identity (ISSP-NI) (1995) ordinal survey response dependent variable that operationalizes the level of immigrant inflows into their country that individuals are willing to support. This measure is widely used in existing empirical studies to evaluate individual support

for immigration (Mayda 2006; O'Rourke and Sinnott 2006), and we follow the lead of these studies to test our hypothesis. The ISSP-NI (1995) survey response measure of immigration support includes a *can't choose* category and is operationalized on a 1 (*reduce immigration a lot*) to 5 (*increase immigration a lot*) scale, where 3 is the middle category that captures a status quo (*remain the same as it is*) preference for immigration.

A key methodological challenge that emerges when testing our hypothesis on the ISSP-NI (1995) ordinal survey response immigration support measure is that respondents who are *uninformed* about immigration tend to choose the middle (the status quo) category of *remain the same as it is* in the response set instead of *can't choose* to "save face." Uninformed respondents thus often conflate the ordered middle category response with the inherently unordered position of *can't choose*. The middle category consequently becomes *inflated* with these unordered "face-saving" responses. This middle category inflation generates serious estimation issues described later that cannot be addressed by standard ordered probit (OP) or ordered logit models that scholars currently use (Mayda 2006) when working with the ISSP-NI (1995) ordinal immigration support measure. We thus develop and present estimates from the following finite mixture statistical model that statistically accounts for the methodological challenge discussed previously: the Middle-inflated Ordered Probit (MiOP) model with and without correlated errors. Estimates from this finite mixture model (1) reveal that there is a statistically robust positive association between individuals who are more aware of their region's main IO and their propensity to support immigration and (2) are more consistent and reliable than the OP model.

This article proceeds as follows. We first develop our theoretical argument that generates our main hypothesis. We then present the MiOP statistical model, the data, the variables, and the empirical results. We conclude by discussing numerous implications that emerge from our findings and provide avenues for future research.

## THEORETICAL FRAMEWORK

Studies of immigration politics have noted that the extent to which individual citizens in countries are informed about immigration issues varies significantly (Freeman 1995; Sides and Citrin 2007). Hence, when theorizing about the information (that is, knowledge) that citizens have about immigration and other political issues, scholars of American and comparative public opinion classify individual citizens into two main groups: "uninformed" and "informed" citizens (Brady and Sniderman 1985; Freeman 1995). Uninformed citizens are individuals who in the context of immigration are poorly informed about immigration issues, including the labor market effects of immigration and the actual inflow of immigrants into their country (Freeman

1995; Martin 2010). Their lack of knowledge about these immigration issues has two consequences. The first is that uninformed individuals eschew learning about immigration as they perceive that the transaction costs of doing so are prohibitively high (Berry 2001; Freeman 1995).

The second consequence is that uninformed respondents are usually uncertain about the economic impact of immigration. Such uncertainty drives uninformed individuals to avoid choosing responses that *unambiguously* capture their support or opposition to immigration when responding to survey questions that track their immigration attitudes. Uncertainty also drives them to not opt for responses such as *don't know* or *can't choose* that reveal their lack of knowledge about immigration. Instead, uninformed respondents tend to choose the *status quo* middle category response—for example, the *remain the same as it is* response in the ISSP-NI (1995) survey data set—in ordinal survey response measures of immigration support in order to “save face” (Berry 2001:620; Williams 2004). This has serious methodological implications that are discussed later in the article’s empirical section.

At this stage, recall that apart from uninformed citizens, there also exist individual citizens that are informed about immigration (Martin 2010). While informed individuals have more knowledge about immigration compared to uninformed individuals, it is also plausible that these individuals may not fully understand or even adequately understand critical facets about immigration (Martin 2010). One reason for this is because immigration is a “complicated topic” that increases the barriers that citizens face when attempting to understand immigration (Freeman 1995). Hence even individuals who are relatively well informed about immigration are often unable to competently judge a complex issue like immigration (Martin 2010; Williams 2004).

Yet it is important to note that unlike uninformed individuals who remain rationally ignorant about immigration, informed individuals often actively seek to enhance their understanding of immigration issues in order to construct their attitudes toward immigration (Martin 2010). Additionally, informed individuals (who are also on average more educated than their uninformed counterpart)<sup>1</sup> typically have a more “cosmopolitan worldview” (Hainmueller and Hiscox 2006; Haubert and Fussell 2006).<sup>2</sup> We suggest that this cosmopolitan worldview makes them more open to exogenous (that is, international) sources of information about immigration, and as a result they will be more cognizant about the functions performed by international regional or multilateral organizations. We further argue that a key consequence of being more open to international sources of immigration information is that informed individuals will tend to use reports about

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<sup>1</sup>The insight that more educated respondents tend to provide “informed” responses to survey questions is suggested by Facchini, Mayda, and Mendola (2013).

<sup>2</sup>We thank an anonymous reviewer for this suggestion.

immigration released by their region's main IO—that is, the main regional IO in which their country actively participates—as a vital source to expand their knowledge about immigration issues. This in turn will induce them to support immigration.

To see why, we need to answer three key questions: (1) What are regional IOs and what specific function do they perform with respect to providing public information about immigration?, (2) Why are informed individuals likely to use such immigration information released by their region's main IO to expand their knowledge about immigration?, and (3) Why will using such public reports about immigration from their region's main IO induce them to support immigration? We employ the following definition of regional IOs by Jon Pevehouse for our theoretical analysis as a first step toward answering these three questions: “Regional (international) organizations are those in which membership consists of geographically approximate states. These organizations are the most common type of IO in the world system” (Pevehouse 2002:520). Prominent examples of regional IOs include the European Union (EU, which incorporates key regional institutions such as the European Commission (EC) and the European Parliament), the Association of Southeast Asian Nations (ASEAN), the South Asian Association for Regional Cooperation (SAARC), the North American Free Trade Agreement (NAFTA), the African Union (AU), and the Gulf Cooperation Council (GCC). While scholars extensively study the impact of regional IOs on democratization (Pevehouse 2002), they pay less attention to the fact that regional IOs are often formally obliged (via treaties that bind member states in a regional IO) to publicly provide information about issues such as the flow and effects of immigration on member states within regions in which these regional IOs operate.

For instance, under Article K1 of the Maastricht Treaty—a key treaty of the EU—the European Commission is required to annually report the following information on immigration to member states in the EU: (1) the share of immigrants that enter each EU member state from EU and non-EU countries and (2) the broad labor market (for example, wage) effects of the entry of immigrants in each EU member state.<sup>3</sup> Data related to the two main immigration issues are first gathered and then publicly reported by the European Commission to reduce misinformation about migrant flows and their effects on EU member countries (European Commission 1995). Likewise, as part of the ASEAN Framework Agreement of Services (FAS), the Directorate-General's Office of ASEAN is required to report the following to Southeast Asian countries that are members of ASEAN: total immigration flows that enter each ASEAN member state from other member countries in the region

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<sup>3</sup>Under Article K1 of the Maastricht Treaty, the EC is required to “obtain, process and report” data on immigration flows to EU member states as this a “matter of common interest” to these member states (European Commission 2001; Geddes 2003:91).



and the share of migrant workers who specifically migrate between member countries within ASEAN (Asian Development Bank 2005). Other regional IOs such as GCC, SAARC, and NAFTA are also formally required to procure, analyze, and publicly release information about immigration issues to member countries in the region in which these IOs operate (Castles and Miller 2003; Meyers 2001).

We posit that publicly released reports on immigration issues by regional IOs are particularly observed by individual citizens who are informed about immigration. As suggested earlier, this is because these individuals have a more cosmopolitan worldview and as a consequence are more knowledgeable about their region's IO. More knowledge of their region's IO increases the likelihood that these individuals will observe and be aware of reports about immigration released by their region's main IO. Further, we suggest (as an answer to our second question stated earlier) that informed individuals are more likely to perceive data and facts on immigration released by regional IOs as credible and accurate. The rationale for this claim is as follows.

First, details about immigration released by regional IOs are obtained, analyzed, and publicly presented by committees or advisory groups (in these IOs) that primarily consist of independent "experts" including academics, policy analysts, and immigration lawyers in the field of immigration (Castles and Miller 2003; Geddes 2003). These independent experts are *not* constrained by interest groups or political constituencies that have vested interests in immigration. For instance, in the EC, data on immigration flows to EU countries is gathered, examined, and reported by the Committee on Migration, Refugees and Displaced Persons (European Commission 2001; Geddes 2003). It is common knowledge to EU member states that this committee consists of academics plus legal experts on immigration whose hands are not tied by politicians (Geddes 2003; Hollifield 1992). Similarly, in the SAARC, data on immigration to and between countries in South Asia are reported by an "advisory group" in the organization that consists of politically autonomous academics and research analysts on immigration (Kashikar 2000).

It is unlikely that immigration experts in committees or advisory groups in regional IOs have a partisan bias because they have strong *reputational incentives* to retain their intellectual independence on immigration issues (Meyers 2001). Hence immigration reports released by committees in regional IOs are less likely to contain exaggerated or false information about immigration. This is in sharp contrast to exaggerated negative effects of immigration that are typically propagated by domestic extremist parties that have partisan political incentives to misrepresent "facts" associated with immigration (Hollifield 1992; Meyers 2001).

Informed individuals who we argue have more knowledge of the regional IO in which their country participates are more likely to be aware

that politically autonomous “experts” on immigration are responsible for preparing reports about immigration trends and issues. Thus, these individuals will recognize that findings about immigration released by their region’s respective IO will *not* be tainted by a partisan bias or exaggerated claims about immigration issues. Consequently, these informed individuals will be more likely to perceive that the data and facts about immigration reported by their region’s main IO are credible and accurate. This will prompt them to use these facts released by their region’s IO to construct their attitudes toward immigration.

Yet the possibility that informed individuals will use immigration reports released by their region’s main IO to construct their immigration attitudes does not by itself answer the third question posited earlier: why will reports about by their region’s main IO induce informed individuals to *support* immigration? Two main reasons help us answer this question. First, extant research shows that reports on immigration flows publicly announced by regional IOs (for example, the EU and ASEAN) often reveal that the actual size of the immigrant population that enter countries in the region under the jurisdiction of these IOs is “significantly low” (United Nations 2006:29). Because individuals with more knowledge of their region’s respective IO are likely to believe that their regional IO’s finding of low immigrant inflows into their country is credible, they will promptly dismiss false claims about the threat posed by the excessively large influx of immigrants into their country that are propagated by anti-immigrant domestic right-wing parties (Martin 2010). Further, studies on public opinion on immigration show that individual citizens take a more favorable view toward immigration when these “citizens have real knowledge—when they have the stats in front of them—of the relatively low share of immigrants” (Martin 2010:74) that enter their country. This favorable view translates to a higher likelihood of support for immigration by informed individuals who on average have more knowledge of their region’s main IO (Martin 2010; Meyers 2001).

Second, domestic debates on immigration by political parties are often politically driven to exaggerate the costs of immigration while deliberately downplaying the benefits of immigration (Freeman 2005; Meyers 2001). Regional IOs, in contrast, do not provide an exaggerated view of the actual costs of immigration and, more importantly, emphasize the aggregate macroeconomic and social benefits of immigration (Geddes 2003; Hollifield 1992). Indeed, consider, for example, a recent report on immigration released by the EC in 2001 that received substantial coverage in the print media (European Commission 2001). This report points out that although intra-EU immigration leads to temporary displacement of workers in certain low-skilled industries, such immigration generates substantial economic benefits for *destination countries* (where the annual flow of immigrants outnumber emigrants) and *emigrant states* (where the share of emigrants exceed the number of immigrants). This report further emphasizes that immigration to

destination states leads to economic revitalization and reductions in concentrated poverty in these countries (European Commission 2001:26–29). Likewise, studies on immigration reported by other regional IOs such as AU, SAARC, and ASEAN also highlight the real and potential economic benefits of immigration, especially to net immigrant states.<sup>4</sup>

We argue that individuals with more knowledge of their region's main IO in which their country is a member will be aware of the material benefits of immigration that—as suggested by the examples in the previous paragraph—are routinely emphasized by their region's main IO. This awareness has two effects on their attitudes toward immigration. The first is that it will help the individuals already mentioned to *learn* precisely how and why the entry of immigrants into their respective country will generate labor market and aggregate macroeconomic dividends for their country. This in turn generates positive perceptions about immigration (Sides and Citrin 2007). It is plausible that such positive perceptions about the material benefits of immigration will induce individuals (who are knowledgeable about their region's IO) to favor immigration.

The second effect is that individuals with knowledge of their region's IO and, therefore, the positive payoffs of immigration advocated by the IO, will be more prone to believe that immigrants integrate well into their country's economy and society. This claim is borrowed from extant research on social perceptions about immigration that suggests that when individuals recognize that immigrants generate positive realized benefits, they develop a bias toward the belief that immigrants easily integrate into the country's social fabric and economy (Williams 2004:83). This bias will further induce individuals who are knowledgeable about their region's IO to support immigration. The theoretical arguments presented above thus lead to Hypothesis 1:

H1: *Individuals with more knowledge of their region's main IO are more likely to support immigration.*

## IMMIGRATION SUPPORT AND THE MIOP(C) MODELS

We use the ISSP-NI (1995) ordinal survey response measure of immigration support as the dependent variable to test Hypothesis 1. The ISSP National Identity Survey was administered to 24 countries across four continents and is unique with respect to (1) extensive cross-national coverage and (2) inclusion of questions of both immigration support and regional IO awareness (our main explanatory variable). This ISSP-NI ordinal survey response measure of immigration support, which is also employed in existing studies

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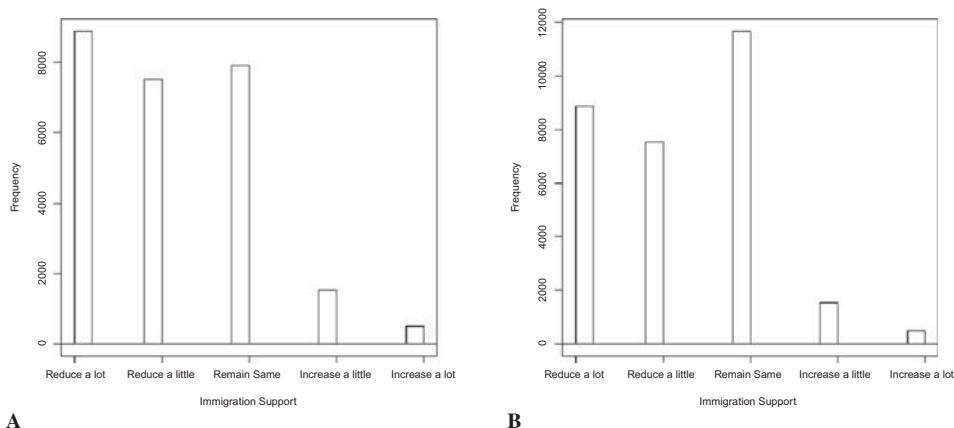
<sup>4</sup>This claim is partly drawn from Asian Development Bank (2005); Segal et al. (2010).

(Mayda 2006; O'Rourke and Sinnott 2006), is based on survey answers to the following question: "Do you think the number of immigrants to [respondent's country] nowadays should be: (a) *reduced a lot*, (b) *reduced a little*, (c) *remain the same as is*, (d) *increased a little*, (e) *increased a lot*, or (f) *can't choose*." In keeping with extant research (Mayda 2006), we omit the *can't choose* category and then situate the first five responses along an ordered scale so as to capture individuals' level of *immigration support*—with values of 1 representing *reduced a lot* and values of 5 representing *increased a lot*—and where 3 is the status quo middle category of *remain the same as is*. Extant studies use ordered probit (OP) or ordered logit (OL) models when working with this *immigration support* ordinal survey response dependent variable (Mayda 2006; O'Rourke and Sinnott 2006). Testing Hypothesis 1 via the OP (or OL) model by using the ordered ISSP-NI (1995) *immigration support* dependent variable generates two estimation issues that must be addressed to avoid biased inferences.

To understand these estimation issues, first recall that we mentioned that respondents who are uninformed about immigration tend to eschew response categories such as *can't choose* and instead choose the status quo middle category in ordinal measures of immigration support to save face. The econometric challenge that emerges when uninformed respondents conflate the ordered status quo middle category with the inherently unordered position of *can't choose* is that the middle category becomes *inflated* with these unordered "face-saving" responses. To see this middle category inflation from an empirical perspective, consider the following two frequency histograms derived from the ISSP-NI (1995) ordered survey response data set described earlier: the (1) first histogram where *can't choose* responses are dropped (Figure 1A) from the data set as done in the case of the *immigration support* measure and (2) the second histogram where *can't choose* responses are instead added to the middle category (Figure 1B).

The *preponderance* of middle category observations in both figures indicates that it is empirically plausible that middle category inflation is present in the ISSP-NI (1995) survey response data set of immigration support. The histogram for the *immigration support* dependent variable (Figure 1A), for instance, reveals that a full 30% of all respondents provided middle category responses. This suggests that it is likely that individuals with little to no knowledge or opinion of immigration issues are frequently opting for the middle *remain the same as is* category to avoid answering *can't choose*.<sup>5</sup> This intuition is also supported theoretically as we mentioned earlier that numerous studies posit that uninformed respondents choose the middle category of ordinal measures of immigration attitudes to "appear informed" rather than

<sup>5</sup>This finding is in fact consistent with other studies that show that ordinal survey response measures of political attitudes contain nonnegligible levels of face-saving responses within their middle categories. See Bagozzi and Mukherjee (2012); Sturgis, Roberts, and Smith (2012).



**FIGURE 1** Frequency histograms of immigration support: (A) *Can't Choose* responses omitted; (B) *Can't Choose* responses in middle category.

opt for *can't choose* that reveals their lack of knowledge about immigration issues (Berry 2001; Williams 2004).

The fact that the status quo middle category response in the ordinal *immigration support* variable is inflated leads to the following two estimation issues that must be addressed to appropriately test Hypothesis 1. First, when uninformed respondents choose the status quo middle category to save face, then observations in this middle category in ordinal survey response dependent variables—in this case the *immigration support* measure—may emerge from the following two distinct data generating processes (DGPs): (1) informed respondents have a genuine status quo preference based on their knowledge about immigration issues, and (2) uninformed respondents who opt for the status quo to “save face.”

Second, inflated middle category responses that contain “face-saving” responses from uninformed respondents do not represent the actual midpoint of an underlying (directional) preference dimension. Instead, they correspond to *nondirectional* positions that a respondent is unable to place along the ordered dimension scale. By virtue of not corresponding to the ordered concept that one is seeking to measure, middle-category “face-saving” responses add measurement error to one’s dependent variable and violate assumptions of ordinality, which reduces the efficiency and consistency of one’s estimates (Bound, Brown, and Mathiowetz 2001). Since standard OP and OL models are not equipped to statistically account for inflated middle category responses in ordinal survey response dependent variables that may relate to two distinct DGPs, estimates from these models are inconsistent and inefficient in this context (Bagozzi and Mukherjee 2012).

To address these econometric issues, we build on recent developments in finite mixture models (Bagozzi and Mukherjee 2012; Harris and Zhao 2007)

and present a middle-inflated ordered probit (MiOP) model that is employed to test Hypothesis 1. The MiOP model is a finite mixture model that addresses the issue of middle category inflation in ordered survey response dependent variables by statistically accounting for the two groups of respondents (informed and uninformed face-saving respondents) who in our context opt for the middle *remain the same as is* category. It does so by explicitly modeling the potential for a dual DGP within the middle category of one's ordered survey response dependent variable. This feature of the MiOP model econometrically captures the possibility that the inflated middle category of the ordinal dependent variable is in effect a *mixture of responses* from two distinct groups (uninformed versus informed individuals). The MiOP estimator models the dual DGP within the middle category by combining the following two latent equations: a "split" probit equation in the first stage (estimating the effect of covariates on the probability with which respondents come from the uninformed versus informed group) and an ordered probit equation in the outcome (second) stage (estimating the effect of a second set of covariates on the probabilities of observing each ordered survey response category, conditional on respondents being in the informed group). Each of these two latent equations contain a stochastic error term that may be independent (the MiOP model) or may be correlated (a variant hereafter referred to as the MiOPC model).

To see the MiOP and MiOPC models more formally, let the ISSP-NI (1995) ordinal survey response dependent variable *immigration support* be labeled as  $y_i$  where  $i \in \{1, 2, 3, \dots, n\}$  denotes each individual respondent. The ordinal dependent variable  $y_i$  is observable and assumes the discrete ordered values of  $y_i = \{1, 2, 3, 4, 5\}$ . The observations in regime 0 ( $s_i = 0$ ) include respondents that belong to the group that is poorly informed (that is, uninformed) about immigration, while observations in regime 1 ( $s_i = 1$ ) include survey respondents that are in the informed group.  $s_i$  is related to the latent dependent variable  $s_i^*$  such that  $s_i = 1$  for  $s_i^* > 0$  and  $s_i = 0$  for  $s_i^* \leq 0$ . The latent variable  $s_i^*$  represents the propensity with which respondents enter regime 1 (that is, are informed about immigration) and is given by the following split probit "inflation" equation:

$$s_i^* = \mathbf{z}'_i \boldsymbol{\gamma} + u_i \quad (1)$$

In (1),  $\mathbf{z}'_i$  is the vector of covariates,  $\boldsymbol{\gamma}$  is the vector of coefficients and  $u_i$  is a standard-normal distributed error term. Hence the probability of respondent  $i$  being in regime 1 is  $\Pr(s_i = 1 | \mathbf{z}_i) = \Pr(s_i^* > 0 | \mathbf{z}_i) = \Phi(\mathbf{z}'_i \boldsymbol{\gamma})$  and the probability that respondent  $i$  is in regime 0 is  $\Pr(s_i = 0 | \mathbf{z}_i) = \Pr(s_i^* \leq 0 | \mathbf{z}_i) = 1 - \Phi(\mathbf{z}'_i \boldsymbol{\gamma})$  where  $\Phi(\cdot)$  is the standard normal cumulative distribution function (CDF).

The outcome equation of the MiOP(C) model is developed from the ordered probit equation for  $y_i = \{1, 2, 3, 4, 5\}$  is defined as,

$$\tilde{y}_i^* = \mathbf{x}'_i \beta + \varepsilon_i \quad (2)$$

$$\tilde{y}_i = \begin{cases} 1 & \text{if } \tilde{y}_i^* \leq \mu_1 \\ 2 & \text{if } \mu_1 < \tilde{y}_i^* \leq \mu_2 \\ 3 & \text{if } \mu_2 < \tilde{y}_i^* \leq \mu_3 \\ 4 & \text{if } \mu_3 < \tilde{y}_i^* \leq \mu_4 \\ J & \text{if } \tilde{y}_i^* > \mu_4 \end{cases} \quad (3)$$

where  $\mathbf{x}'_i$  is a vector of covariates,  $\beta$  is the vector of coefficients,  $\varepsilon_i$  is a standard normal distributed error term, and  $\mu_j$  (where  $j = \{1, 2, 3, 4, 5\}$ ) is the vector of boundary parameters. Since  $\varepsilon_i$  is assumed to be standard normal, the ordered probit probabilities for  $y_i = \{1, 2, 3, 4, 5\}$  are

$$\tilde{y}_i = \begin{cases} \Pr(\tilde{y}_i = 1) = \Phi[\mu_1 - \mathbf{x}'_i \beta] \\ \Pr(\tilde{y}_i = 2) = \Phi[\mu_2 - \mathbf{x}'_i \beta] - \Phi[\mu_1 - \mathbf{x}'_i \beta] \\ \Pr(\tilde{y}_i = 3) = \Phi[\mu_3 - \mathbf{x}'_i \beta] - \Phi[\mu_2 - \mathbf{x}'_i \beta] \\ \Pr(\tilde{y}_i = 4) = \Phi[\mu_4 - \mathbf{x}'_i \beta] - \Phi[\mu_3 - \mathbf{x}'_i \beta] \\ \Pr(\tilde{y}_i = J) = \Phi[\mu_{J-1} - \mathbf{x}'_i \beta] - \Phi[\mu_J - \mathbf{x}'_i \beta] \end{cases} \quad (4)$$

Suppose that error term from the probit inflation equation ( $u_i$ ) and the ordered probit equation ( $\varepsilon_i$ ) are independent and identically distributed (IID) and normally distributed. If  $u_i$  and  $\varepsilon_i$  are not correlated, then we can use (1) and (4) to define the augmented ordered probit outcome equation of the MiOP model, which is

$$\Pr(y_i) = \begin{cases} \Pr(y_i = 1 | \mathbf{x}_i, \mathbf{z}_i) = \Phi(\mathbf{z}'_i \gamma) [\Phi(\mu_1 - \mathbf{x}'_i \beta)] \\ \Pr(y_i = 2 | \mathbf{x}_i, \mathbf{z}_i) = \Phi(\mathbf{z}'_i \gamma) [\Phi(\mu_2 - \mathbf{x}'_i \beta) - \Phi(\mu_1 - \mathbf{x}'_i \beta)] \\ \Pr(y_i = 3 | \mathbf{x}_i, \mathbf{z}_i) = [1 - \Phi(\mathbf{z}'_i \gamma)] + [\Phi(\mathbf{z}'_i \gamma) (\Phi(\mu_3 - \mathbf{x}'_i \beta) - \Phi(\mu_2 - \mathbf{x}'_i \beta))] \\ \Pr(y_i = 4 | \mathbf{x}_i, \mathbf{z}_i) = \Phi(\mathbf{z}'_i \gamma) [\Phi(\mu_4 - \mathbf{x}'_i \beta) - \Phi(\mu_3 - \mathbf{x}'_i \beta)] \\ \Pr(y_i = 5 | \mathbf{x}_i, \mathbf{z}_i) = \Phi(\mathbf{z}'_i \gamma) [1 - \Phi(\mathbf{x}'_i \beta - \mu_4)] \end{cases} \quad (5)$$

The expression in (5) provides the full probabilities of the augmented ordered probit (outcome) equation of the MiOP model; we label these probabilities as outcome probabilities for convenience. Put together, the split probit equation in (1) constitutes the first stage of the MiOP model, while the augmented ordered probit outcome equation in (5) constitutes the second stage of the MiOP model.

If the error terms in the two latent equations of the MiOP model ( $u_i$  and  $\varepsilon_i$ ) are correlated and follow a bivariate normal distribution with correlation coefficient  $\rho_{\varepsilon u}$ , then the augmented ordered probit outcome equation of the MiOP model is

$$\Pr(y_i) = \begin{cases} \Pr(y_i = 1 | \mathbf{x}_i, \mathbf{z}_i) = \Phi_2(\mathbf{z}'_i \gamma, \mu_1 - \mathbf{x}'_i \beta; -\rho_{\varepsilon u}) \\ \Pr(y_i = 2 | \mathbf{x}_i, \mathbf{z}_i) = \{\Phi_2(\mathbf{z}'_i \gamma, \mu_1 - \mathbf{x}'_i \beta; -\rho_{\varepsilon u}) - \Phi_2(\mathbf{z}'_i \gamma, \mu_2 - \mathbf{x}'_i \beta; -\rho_{\varepsilon u})\} \\ \Pr(y_i = 3 | \mathbf{x}_i, \mathbf{z}_i) = [1 - \Phi(\mathbf{z}'_i \gamma)] + \left\{ \begin{array}{l} \Phi_2(-\mathbf{z}'_i \gamma, \mu_2 - \mathbf{x}'_i \beta; -\rho_{\varepsilon u}) \\ -\Phi_2(\mathbf{z}'_i \gamma, \mu_3 - \mathbf{x}'_i \beta; -\rho_{\varepsilon u}) \end{array} \right\} \\ \Pr(y_i = 4 | \mathbf{x}_i, \mathbf{z}_i) = \{\Phi_2(\mathbf{z}'_i \gamma, \mu_3 - \mathbf{x}'_i \beta; -\rho_{\varepsilon u}) - \Phi_2(\mathbf{z}'_i \gamma, \mu_4 - \mathbf{x}'_i \beta; -\rho_{\varepsilon u})\} \\ \Pr(y_i = 5 | \mathbf{x}_i, \mathbf{z}_i) = \Phi(\mathbf{z}'_i \gamma, \mathbf{x}'_i \beta - \mu_4; \rho_{\varepsilon u}) \end{cases} \quad (6)$$

where  $\Phi_2(\cdot)$  denotes the CDF of the standardized bivariate normal distribution. The expression in (6) provides the full outcome probabilities of the augmented ordered probit equation—the second stage—of the MiOPC model, while the split probit equation in (1) constitutes the first stage of the MiOPC model.

The MiOP and MiOPC models presented here jointly estimate the split probit equation and the relevant augmented OP outcome equation. More importantly, note that the probability of the middle category in the augmented ordered probit equation of the MiOP model and MiOPC model is modeled conditional upon the probability of an observation being assigned the middle “status quo” category (*remain the same as is*) value in the ordered probit process (for *immigration support*) plus the probability of it being in regime 0 (the group of respondents that are *uninformed* about immigration) from the split probit (that is, inflation) equation. This feature allows us to statistically account for (1) middle category inflation in the *immigration support* ordinal survey-response dependent variable that is partly engendered by a high proportion of uninformed respondents who opt for the middle status quo category of this variable to save face and (2) the possibility that the inflated middle category of *immigration support* contains responses from the two distinct groups mentioned earlier. The likelihood and log-likelihood functions of the MiOP and MiOPC model are formally defined in the article’s Web appendix.<sup>6</sup>

## EMPIRICAL ANALYSIS

We conduct our empirical analysis in two steps. First, we compare the performance of the MiOP(C) models to the OP model in the ISSP-NI (1995) survey response data set where the dependent variable is the ordinal

<sup>6</sup>The log-likelihood function of the MiOP and MiOPC model can be consistently and efficiently estimated using maximum likelihood, which yields asymptotically normally distributed maximum likelihood estimates. Newton numerical optimization methods can be used to estimate the MiOP and MiOPC model. The authors of this article have written code to permit users to estimate the MiOP(C) model using R.



*immigration* support measure. For this exercise, our specification (described later) is drawn from Mayda's (Table 3—Model 2, 2006) empirical study of immigration attitudes because our sample as well as cross-national assessment for immigration support directly corresponds to Mayda's (2006) sample plus empirical tests, which is the most comprehensive cross-national analysis of individual support for immigration. We show later that the MiOP(C) models provide more reliable estimates than the OP model when working with the ordinal *immigration support* measure. Second, after having established the necessity of using MiOP(C) models for the study of the ISSP-NI survey question on immigration, we empirically evaluate Hypothesis 1.

We first list the covariates in the OP and MiOP(C) outcome equations and then list the covariates included in the equation of the MiOP(C) models. Our OP and MiOP(C) outcome equation specification focuses on Mayda's (Table 3—Model 2, 2006) analysis of the effects of individual skill level and national economic development on the ISSP's question of immigration support. In her article, Mayda (2006) reports results from a dichotomized version of *immigration support*.<sup>7</sup> She, however, emphasizes in footnote 11 of her study that the OP model results obtained from the ISSP-NI (1995) ordinal *immigration support* measure (in which she omits all *can't choose* responses) are "consistent with the results based on the dichotomous variable" (Mayda 2006:513). Accordingly, we replicate Mayda's analysis while using the ordinal *immigration support* measure described previously and omit all *can't choose* responses from the resultant dependent variable's response set.<sup>8</sup> Additionally, following Mayda (Table 3—Model 2, 2006), we exclude from our sample all individuals who were not citizens of the country where they were interviewed.

We then specify our OP, MiOP, and MiOPC models with the full set of independent and control variables used by Mayda (Table 3—Model 2, 2006), which includes *age*, *male*, *parents' foreign citizenship*, *education*, an *education*  $\times$  *GDP* interaction, and *right leaning party identification*. Unlike Mayda (2006), we also include the final component to her *education*  $\times$  *GDP* interaction term (that is, *GDP*), as findings published subsequent to those of Mayda (2006) have established that the inclusion of *all* components to an interaction term is critical to the accurate interpretation of the interaction term's effects (Brambor, Clark, and Golder 2006). However, given the cross-sectional nature of the ISSP data, the inclusion of *GDP* also forces us to also omit Mayda's country-specific fixed effects, as *GDP* does not vary within countries. Our MiOP(C) estimates remain stable under alternative models (to

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<sup>7</sup>She omits all *can't choose* responses from her analysis of the dichotomized version of immigration support.

<sup>8</sup>Hence our dependent variable corresponds to the responses presented in Figure 1A. Our main theoretical insights are robust to the addition of all *can't choose* responses to the middle category of our dependent variable.

those reported later) that use fixed effects in place of *GDP*. The sources and operationalizations for these independent variables are listed in the article's Web appendix. It is worth noting here that Mayda theoretically expects and empirically finds *education* to have a significant negative effect on support for immigration and *education*  $\times$  *GDP* to have a significant positive effect on support for immigration, which together suggest that higher individual skill levels are negatively associated with pro-immigration attitudes in low-income countries but positively associated with pro-immigration attitudes in high-income countries.

As mentioned earlier, we include a set of covariates in the probit "inflation stage" of the MiOP(C) models, which past studies suggest should affect whether or not an individual is likely to (1) be immigration informed and/or (2) provide a face-saving middle category response—relative to an actual middle category response. To this end, we first include *education* in the probit inflation equation as it is likely that more-educated individuals are well informed about immigration compared to less-educated individuals and will therefore be more apt to provide an informed (that is, genuine) middle category response on *immigration support* (Freeman 2005; Sides and Citrin 2007). *National economic attachment* is included as citizens with stronger national economic attachments tend to be more cognizant of potential threats and boons to their nation's economy from immigration and are thus more likely to be informed about immigration, or "immigration informed" (Berry 2001; Williams 2004). *Center party identification* is added to the inflation equation as case studies of immigration politics reveal that individuals who report their political ideology to be "center" are, on average, less concerned and consequently less informed about immigration (Geddes 2003; Segal et al. 2010). We control for (1) *parents' foreign citizenship* under the presumption that individuals with foreign-born parents will be more immigration informed due to their personal experience with the issue and (2) *male* as males have a greater tendency to be informed about political issues including immigration (Berry 2001; Segal et al. 2010). The estimates of the covariates (listed previously) in the OP specification as well as the MiOP(C) specification are reported in Table 1.<sup>9</sup>

We first report the MiOP(C) inflation stage results in Table 1 in which a positive coefficient estimate implies that a variable is positively associated with an "immigration-informed" middle category response (that is, noninflation). In the inflation stage, we find—consistent with theoretical expectations—that *male* and *national economic attachment* are each positive and significant predictors of an individual providing an informed, rather

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<sup>9</sup>The OP and MiOP models reported later were estimated in R using both `nlm()` and `optim()`—the latter employing BFGS, wherein we found comparable results under each optimization technique. However, BFGS optimization proved to be highly sensitive to starting values for the MiOP(C) models reported later, and hence `nlm()` was used for MiOP(C) optimization.

**TABLE 1** Small OP, MiOP, and MiOPC Models of Immigration Support

	OP	SE	MiOP	SE	MiOPC	SE
<i>Outcome Stage</i>						
Age	-0.002***	(0.001)	-0.002***	(0.001)	-0.002***	(0.001)
Male	-0.006	(0.019)	-0.036	(0.023)	-0.058**	(0.024)
Parents' Foreign Citizenship	0.237***	(0.020)	0.273***	(0.026)	0.254***	(0.027)
Education	-0.387***	(0.069)	-0.014	(0.103)	0.008	(0.074)
Education × GDP	0.045***	(0.007)	0.008	(0.011)	0.007	(0.008)
GDP	-0.587***	(0.088)	-0.136	(0.135)	-0.083	(0.093)
Party Affiliation with Right	-0.095***	(0.009)	-0.106***	(0.011)	-0.093***	(0.010)
<i>Inflation Stage</i>						
Constant			0.703***	(0.152)	-0.545	(0.443)
Male			0.117*	(0.065)	0.464***	(0.146)
Parents' Foreign Citizenship			-0.003	(0.061)	-0.243	(0.420)
Education			0.002	(0.023)	0.168***	(0.021)
National Economic Attachment			0.067***	(0.025)	0.105***	(0.034)
Center Party Identification			-0.215**	(0.087)	-0.502***	(0.111)
$\mu_1$	-5.699***	(0.861)	-0.995	(1.376)	-0.452	(0.924)
$\mu_2$	-4.923***	(0.861)	-0.046	(1.450)	0.332	(0.923)
$\mu_3$	-3.310***	(0.860)	0.743	(1.284)	1.485	(0.920)
$\mu_4$	-2.960***	(0.860)	1.534	(1.294)	2.241**	(0.920)
$\rho$					0.817***	(0.189)
<i>N</i>	13,638		13,638		13,638	
Log Likelihood	-17660.29		-17656.03		-17640.89	
AIC	35298.58		35278.07		35225.78	

Note. Sample excludes individuals who were not citizens of the country where they were interviewed. Standard errors in parentheses. \* $p < .10$ , \*\* $p < .05$ , \*\*\* $p < .01$ .

than face-saving, middle category response. Individuals who report having a “center” *party identification* are instead more likely to provide uninformed, face-saving, responses to our question of interest. Finally, our MiOPC model also suggests that *education* is a positive and significant predictor of an individual’s propensity toward being “immigration informed,” thereby implying that individuals with lower levels of education (and hence skill level) are simply less likely to provide an informed answer to immigration questions to begin with. These findings provide a degree of initial theoretical support for the presence of middle category inflation in *immigration support* and for the utility of MiOP(C) models in any analysis thereof.

We rely on nonnested model selection tests to assess whether our MiOP(C) model specifications are superior to a comparable OP model specification (Bagozzi and Mukherjee 2012; Harris and Zhao 2007). Using a variant of the Young test to separately compare the OP model to our MiOP and MiOPC models, we find that this test statistic strongly favors the MiOP and MiOPC models’ probabilities of correct prediction over those of the OP model ( $v < 1.96$ ). Akaike information criterions (AICs) also favor the MiOP(C) models over the OP model (see Table 1). Finally, we employ a  $t$ -test of  $\rho = 0$  to directly compare our MiOP and MiOPC models. The result from this  $t$ -test for our data application reveals that  $\rho$  is positive and significant, which thereby favors the MiOPC model over the MiOP model.<sup>10</sup> Our model fit statistics thus not only favor the MiOP(C) models to the OP model for our data of interest, but also suggest that the MiOPC model is superior to the MiOP model for this specific application.

Having demonstrated that middle category inflation may indeed be present in *immigration support* and that our MiOP(C) model specifications of *immigration support* are superior in model fit to comparable OP models, we turn to present the results from the ordered-outcome stages of the OP, MiOP, and MiOPC models in Table 1. For all three models, the negative estimate of *age* and *right-leaning party identification* on *immigration support* is significant, and the positive coefficient for *parents’ foreign citizenship* is also significant.<sup>11</sup> By contrast, Table 1’s OP and MiOP(C) results diverge for *education*, *GDP*, and *education*  $\times$  *GDP*. Here, and consistent with the findings reported by Mayda, the OP model results for these three covariates are statistically significant and together imply that higher skill levels are negatively associated with *immigration support* in low-income countries but positively associated with pro-immigration attitudes in high-income countries. However, the MiOP and MiOPC models instead suggest that, once an individual’s propensity to provide an informed middle category response is accounted for, *education*, *GDP*, and *education*  $\times$  *GDP* no longer have

<sup>10</sup>Likelihood ratio tests and AICs also favor the MiOPC over the MiOP.

<sup>11</sup>The results for these covariates are consistent with those reported studies of immigration support by, for example, O’Rourke and Sinnott (2006).

a significant conditional direct effect on *immigration support*.<sup>12</sup> Together with the model fit statistics and inflation stage results discussed previously, the findings reported here thereby suggest that middle category inflation is indeed present in *immigration support*, and that failing to account for this inflation can lead to biased inferences.

We next turn to an empirical test of Hypothesis 1, which posits that individuals with more knowledge of the main international organizations (IOs) in their region are more likely to be supportive of immigration. The key explanatory variable that is included—in the MiOP(C) outcome equations and the OP specification—to test this hypothesis is respondent awareness of regional international organizations (*regional IO awareness*), which is also taken from the 1995 National Identity Survey (ISSP 1995). The question of interest asks respondents, “How much have you heard or read about (appropriate association for your continent/subcontinent)?” For example, respondents in European Union member countries at the time of the survey were asked to respond concerning their level of awareness of the EU, and respondents in Canada and the United States were asked of their awareness of NAFTA. The available responses are as follows: *a lot, quite a bit, not much, nothing at all, don't know*. The first four of these responses are ordered, such that a response of *a lot* receives a value of 4 and a response of *nothing at all* receives a value of 1. Apart from *regional IO awareness*, we retain the same set of covariates in the OP and MiOP(C) outcome equations that are listed in the outcome equations in Table 1. The MiOP(C) inflation stage covariates are also similar to those listed in the inflation stage in Table 1 except for the fact that we add *regional IO awareness* to the MiOP(C) models' inflation stages to account for the potential effect of *awareness* on providing an (un)informed response.<sup>13</sup>

The inflation stage results reported in Table 2 are largely consistent with the inflation-stage results reported in Table 1 and are hence not discussed

<sup>12</sup>We verify that this is the case by extracting and interpreting the conditional marginal effects from our *education* × *GDP* interaction—along the lines prescribed by Brambor et al. (2006)—in our online appendix. Also note that this null finding does not imply a null finding for the unconditional effect of skill level (*education*) or *GDP* on an individual's level of immigration support. In fact, the marginal effects in the online appendix suggest that *education* may have a positive and statistically significant, unconditional direct effect on *immigration support* in the MiOP(C) models.

<sup>13</sup>We also re-estimate the models later after adding all *can't choose* responses to our dependent variable's middle category. While there is good reason to believe that “face-saving” respondents may differ from *can't choose* respondents, some traits are likely consistent across these two groups, and we use this alternate dependent variable as a means of validating our theoretical claims. Here, our main outcome stage findings remain, ostensibly because these models' inflation stages are now accounting for both “face-saving” and *can't choose* respondents. Furthermore, the majority of our inflation stage covariates (several of which were included to directly capture knowledge levels) also remain significant and in many cases increase in both magnitude and statistical significance in theoretically anticipated directions. Thus, while not entirely compatible, these two subsets of low knowledge individuals appear to share a number of common traits.

**TABLE 2** Large OP, MiOP, and MiOPC Models of Immigration Support

	OP	SE	MiOP	SE	MiOPC	SE
<i>Outcome Stage</i>						
Age	-0.005***	(0.001)	-0.005***	(0.001)	-0.005***	(0.001)
Male	-0.054**	(0.023)	-0.023	(0.027)	-0.014	(0.031)
Parents' Foreign Citizenship	0.260***	(0.032)	0.252***	(0.035)	0.261***	(0.040)
Education	-0.410***	(0.091)	-0.215**	(0.104)	0.090	(0.094)
Education × GDP	0.045***	(0.009)	0.027**	(0.011)	0.015	(0.010)
GDP	-0.461***	(0.118)	-0.234*	(0.134)	-0.071	(0.121)
Party Affiliation with Right	-0.127***	(0.012)	-0.130***	(0.013)	-0.123***	(0.012)
Regional IO Awareness	0.151***	(0.015)	0.147***	(0.016)	0.150***	(0.018)
<i>Inflation Stage</i>						
Constant			0.465	(0.462)	-0.418	(0.360)
Male			0.537*	(0.289)	0.308*	(0.163)
Parents' Foreign Citizenship			-0.352*	(0.191)	0.002	(0.250)
Education			0.155***	(0.026)	0.172***	(0.019)
National Economic Attachment			0.073	(0.064)	0.071*	(0.040)
Center Party Identification			-0.214	(0.179)	-0.175	(0.121)
Regional IO Awareness			-0.116	(0.113)	0.040	(0.079)
$\mu_1$	-4.662***	(1.153)	-2.272	(1.325)	-0.445	(1.199)
$\mu_2$	-3.847***	(1.153)	-1.472	(1.328)	0.335	(1.199)
$\mu_3$	-2.542***	(1.152)	0.220	(1.319)	1.574	(1.195)
$\mu_4$	-1.780***	(1.151)	0.551	(1.320)	2.340**	(1.195)
$\rho$					0.840***	(0.109)
<i>N</i>	8,982		8,982		8,982	
Log Likelihood	-11543.5		-11523.35		-11511.73	
AIC	23063.01		23009.31		22983.46	

Note. Sample excludes individuals who were not citizens of the country where they were interviewed. Standard errors in parentheses. \* $p < .10$ , \*\* $p < .05$ , \*\*\* $p < .01$ .

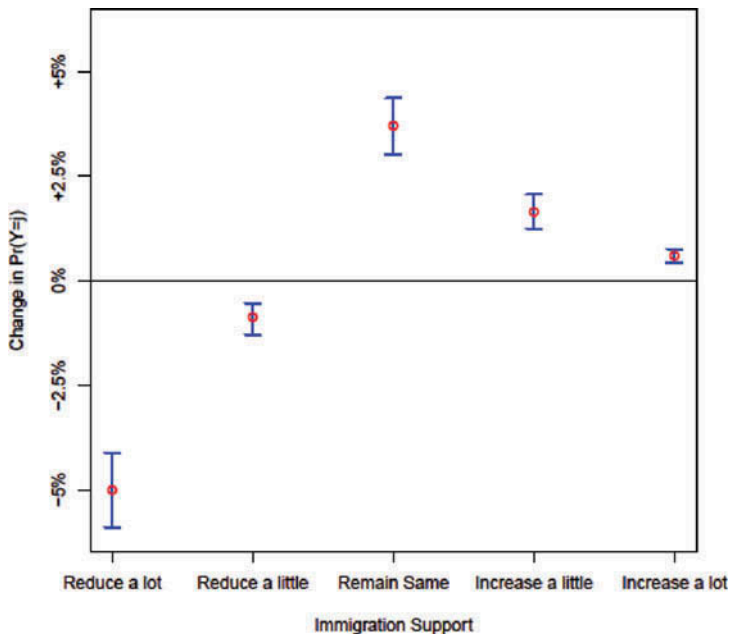
here to save space. Note, however, that the measure of *regional IO awareness* does not show a statistically significant association with providing an informed middle category response in Table 2, though it is in the expected direction in the MiOPC model, our preferred model.<sup>14</sup>

Drawing on the evidence for middle category inflation and support for the previous MiOPC model, we shift focus to the outcome stage results for *immigration support* in Table 2. First, regarding the hypothesis that regional IO awareness increases support for immigration, we note that *regional IO awareness* is positive and significant in the outcome equation of our preferred model, the MiOPC, in Table 2. Hence, higher levels of *regional IO awareness* correspond to stauncher pro-immigration stances among immigration-informed individuals. Furthermore, the coefficient estimates on *regional IO awareness* obtained in the MiOP outcome equation and OP specification are also positive and significant, indicating that the finding is highly robust to model choice, and to an individual's propensity to be immigration informed. These findings provide substantial evidence in support of our claim that respondents with higher levels of awareness of their respective regional IOs are likely to be more supportive of immigration.

To evaluate the substantive significance of *regional IO awareness*, we next compare the first differences in the predicted probabilities of observing each of our five outcomes of *immigration support*, given a 3-to-4 (outcome stage) change in *regional IO awareness*—which roughly corresponds to an increase in *regional IO awareness* from its mean to one standard deviation above its mean.<sup>15</sup> We do so while holding all other outcome and inflation stage variables to their means or modes and use parametric bootstraps to recover and plot the 90% confidence intervals to each predicted probability ( $m = 5,000$ ). To save space, we only report the marginal effects of *regional IO awareness* from the MiOPC model. Figure 2 accordingly plots the (MiOPC) estimated effects of a 3-to-4 (outcome stage) change in *regional IO awareness* on the probability of observing each *immigration support* response. Beginning with the two anti-immigration responses on the leftmost portion of Figure 2, we find here that a moderate increase in regional IO knowledge is associated with a sizable *decrease* (by as much as 5%) in the likelihood of opposition toward immigration among immigration-informed individuals. By contrast, our predicted probabilities of status quo opinions toward, or outright support for, immigration—presented on the right hand side of Figure 2—instead imply that a 4-to-5 change in *regional IO awareness* will lead to increased support for (or indifference more immigration

<sup>14</sup>We compared the models reported in Table 2 with several model fit statistics. Young tests and AICs strongly favor the MiOP(C) models over the OP model ( $\nu < 1.96$ ), whereas in testing the restriction that  $\rho = 0$ , we again find that  $\rho$  is positive and significant, indicating support for the MiOPC over the MiOP.

<sup>15</sup>And more specifically, corresponds to a shift from a response of *quite a bit* to a response of *a lot* on our *regional IO awareness* question of “How much have you heard or read about (appropriate association for your continent/subcontinent)?”



**FIGURE 2** MiOPC predicted effects of regional IO awareness on immigration support (color figure available online).

among immigration-informed respondents. Hence, *regional IO awareness* significantly decreases opposition toward, and increases individuals' support for, immigration.

With respect to the other variables in the MiOPC outcome stage, we find in [Table 2](#) that—conditional on being informed about immigration—older individuals are again less likely to support immigration, and this effect is consistent across each of the other models. Males are found to be neither more nor less supportive of immigration. Immigration-informed respondents with foreign-born parents, as expected, are more likely to support immigration, and this effect is likewise consistent across the models. Also as expected, we find that party affiliation with the right is negatively associated with immigration support and significant in all models. Looking at the interaction term of conditional skill level and economic development, we see again in [Table 2](#) that the findings from the OP model are consistent with those reported by Mayda. While the findings for the interaction term are consistent in the MiOP model as well, these terms no longer have significant effects on support for immigration when accounting for the propensity to provide an informed middle category response in the MiOPC model.<sup>16</sup> These findings, understood in light of the potential for biased inferences

<sup>16</sup>We verify that this is the case by evaluating conditional probabilities.



when not accounting for inflation in middle category responses, again speak to the utility of the MiOP(C) models as the appropriate modeling strategy in analyzing immigration support.

## CONCLUSION

We suggested here that regional IOs release reports about immigration flows and the benefits of immigration. Since these reports are developed by immigration “experts” within regional IOs, individuals who have more knowledge of their region’s IO—and are thus more aware of their IO’s published reports—will perceive that these reports are credible. This increases the probability that these individuals will support immigration. The estimates from the statistical models corroborate this claim.

The results presented here provide two main contributions to the study of individual immigration attitudes. The first is theoretical in that we develop causal arguments that examine how publicly released information about immigration from regional IOs affects individual attitudes toward immigration. These causal arguments build on but also depart from extant studies that analyze how economic factors (for example, the skill level of individuals) or immigration information provided by *domestic* sources affect individual support for immigration (Hainmueller and Hiscox 2006, 2010; Mayda 2006).

The second contribution is methodological, as we evaluate our hypothesis by employing finite mixture models, that is, the MiOP(C) models, that statistically address the issue that uninformed respondents “save face” by opting for the middle status quo category in ordinal measures of immigration support. This is important, as extant empirical research on immigration attitudes does *not* to the best of our knowledge statistically account for the possibility that uninformed respondents tend to “save face” when responding to survey questions about immigration. The MiOP(C) models explicitly addresses the phenomenon of “face saving” in the context of immigration attitudes and moreover, provides substantive empirical insights on *when* individuals are more (or less) likely to be informed about immigration. The MiOP(C) model results also challenge extant empirical findings about the interaction effect of *education*  $\times$  *GDP* on immigration support that are derived from standard OP or OL models.

Two additional policy-relevant insights emerge from our study. First, governments that are interested in reducing xenophobic attitudes toward immigrants held by certain citizens should take concrete steps to increase such citizens’ awareness of immigration reports published by the regional IO in which the government actively participates. Doing so may make these citizens more cognizant of the benefits of immigration that may dampen their anti-immigration attitudes. The second policy implication is that if regional IOs indeed influence citizens to be more receptive to immigration,

then it is plausible that regional IOs may have a positive effect on international migration flows to particularly “immigrant-receiving” countries. Greater migrant flows to these states may promote a more productive workforce that promotes economic growth.

The research in this article can be extended in two main directions. First, we hope to build upon the statistical models presented previously by further developing multicategory response OP mixture models for their application to ordered survey response questions of interest to IPE scholars. These extensions will be useful, for instance, in assessments of whether the wording of IPE survey questions compel uninformed individuals to opt into (positive or negative) response choices to “save face” when middle categories are unavailable. Second, it might be worthwhile to explore whether domestic political elites who support immigration employ findings about immigration from regional IOs to bolster the credibility of their claims of the benefits of migrants in the political arena.

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