POLITICAL SCIENCE

Which immigrants do citizens prefer? A meta-reanalysis of 100 conjoint experiments

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In the past decade, an important literature in the social sciences has examined public attitudes toward immigrants in host societies. In it, a prominent experimental method—the conjoint design, where participants are tasked with rating or choosing between randomized profiles—has been used reliably to understand how immigrant characteristics shape admission preferences. We collate replication datasets from 100 individual studies spanning 1,475,403 immigrant profiles with 26 randomized attributes evaluated by 142,817 survey respondents from 36 countries. Meta-analyses reinforce well-established findings: Economic, cultural, humanitarian, and procedural factors all influence evaluations. Meta-reanalyses show that preferences are broadly similar across countries and demographic groups. However, they also reveal two additional patterns: Economic considerations have become more influential over time, and evaluations of individual immigrants differ sharply depending on where people stand on the broader immigration debate. These findings shed light on ongoing debates and point to fruitful areas for future research.

INTRODUCTION

With increasing globalization, the backlash against immigration has become a major political issue across liberal democracies (*1*). National polls consistently show that immigration is a top concern and an increasingly divisive issue within countries (*2*–*4*). In tandem with the rise of anti-immigrant sentiment, nativism has become more prominent in election campaigns (*5*, *6*). Public opinion toward immigrants not only shapes political priorities in democracies but also influences policies related to immigrant integration and incorporation (*7*–*9*).

Broadly, research on the drivers of support for or opposition to immigration has fallen into one of two camps: material self-interest and concerns for society writ large. The first argues that natives should oppose immigrants with similar skill levels who would compete with them for employment or benefits (*10*–*13*). However, experimental evidence does not support this individual-level competition hypothesis; instead, concerns unrelated to individual economic self-interest—such as the broader economic or cultural impact of immigration, as well as prejudice or ethnocentrism—are more prominent factors (*14*–*16*). Within these sociopsychological explanations, the literature again takes two broad approaches—economic and cultural considerations. The former argues that natives prefer immigrants who have the greatest positive impact on the national economy—higher skilled, highly educated immigrants who would presumably require less welfare (*17*–*19*). The latter argues that natives prefer immigrants who are culturally closer to them—through having shared language, race, religion, or general cultural familiarity (*20*–*22*).

Despite the wealth of evidence generated by this literature, important gaps remain. First, different studies often find seemingly conflicting conclusions—that both economic and cultural considerations matter simultaneously (*23*–*25*), that they may interact with one another (*26*), that cultural factors overall play a greater role in determining support for immigrants (*27*, *28*), or conversely that economic factors matter more (*29*). Second, despite the abundance of empirical research dedicated to uncovering explanations for individual attitudes, most studies have been constrained by small sample sizes and the reliance on correlational rather than causal evidence. A 2014 review (*30*) based on more than 100 studies notes that many of them suffer from endogeneity. Experimental studies, while advantageous for causal identification, are also characterized by underpowered samples (*31*) and information equivalence violations (*32*). Moreover, the external validity of the median study is modest as it centers on specific contexts while deploying unique treatment-outcome combinations. A large body of work comparing public opinion in various countries highlights persistent cross-national variation in immigration attitudes. These tend to be shaped by factors such as national norms around cultural unity (*33*), whether national identity traditions draw on ethnic or civic principles (*34*, *35*), macrolevel economic trends (*36*), the dominant political ideology in a country (*37*), and the inclusiveness of immigrant integration policies (*38*). Yet, few efforts have systematically aggregated experimental evidence across multiple countries, leaving open questions about how far such differences generalize. Thus, while important strides have been made, the literature is still grappling with substantial gaps in our understanding that prevent definitive conclusions about the drivers of public opinion on immigration worldwide.

Here, we systematically review, meta-analyze, and "meta-reanalyze" (*39*) evidence from past research. We use an individual participant data meta-analytic approach, which provides greater precision, comparability, and flexibility than other meta-analytic approaches (*40*–*42*) and enables us to comprehensively explore a wide range of theoretically important questions even when original studies do not. We do this with the assumption that aggregating studies should yield more precise and reliable conclusions than considering any given study in isolation. We go beyond prevalent debates in the field (e.g., culture versus economics) by systematically examining mechanisms agnostically by leveraging the wide variety of explanatory factors put forward by researchers.

Our efforts aim to answer four main empirical questions: (i) What characteristics of potential immigrants make them more or less desirable for host countries? (ii) How do the effects of these characteristics vary across countries? (iii) How do they vary across

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time? (iv) How do they vary across individuals? To answer these questions, we collate data for 100 conjoint experimental studies from 34 published and unpublished articles comprising nearly 1.5 million immigrant profiles with 26 randomized attributes evaluated by nearly 143,000 respondents from 36 countries across six continents. While all of these studies are published or written in English (see section S22 for details on our search for studies in six languages), they include survey instruments that were fielded in several languages, including Arabic, Chinese, Czech, Danish, Dutch, French, German, Greek, Hungarian, Italian, Japanese, Korean, Norwegian, Pashto, Polish, Portuguese, Slovak, Spanish, Swedish, Tagalog, Turkish, Urdu, and Zulu.

Our meta-analyses focus exclusively on conjoint experiments on immigration preferences. Conjoint experiments consist of hypothetical immigrant profiles varying along randomized attributes most commonly signaling economic (e.g., employment), cultural (e.g., religion), humanitarian (e.g., persecution), and procedural (e.g., irregular entries) considerations. Respondents are asked to evaluate successive profiles (often in pairs) and state which immigrants should be admitted into the host country or granted permanent status or citizenship. A crucial strength of conjoint experiments is that they allow researchers to assess the independent, causal effects of multiple attributes net of each other (*43*). Furthermore, manipulating various attributes at once better reflects a reality where preferences are multidimensional (*43*) while increasing information equivalence by limiting respondents' ability to infer missing pieces of information (*32*) and decreasing social desirability bias by allowing survey respondents to state controversial preferences indirectly (*44*). As such, conjoint experiments are more likely than other designs to generate externally valid conclusions about real-world behavior (*45*).

Other studies have sought to systematically review and meta-analyze the literature on public attitudes toward immigration (*25*, *46*–*49*). Like most of these (*25*, *46*, *48*, *49*), we assess how economic, cultural, humanitarian, and procedural considerations shape citizens' views of immigrants, reinforcing well-established findings about their influence. That said, we build on these reviews by highlighting heterogeneity in attitudes across both individual-level factors—demographics, socioeconomic status, and political predispositions (*25*, *46*, *48*)—and contextual factors—region (Global North versus South) and migration domain (economic immigrants versus asylum seekers) (*25*, *47*, *49*), opening up directions for future research. This builds on long-standing comparative research documenting cross-national variation in immigration attitudes (*33*–*38*) but moves beyond region-specific studies by integrating data from a wide variety of contexts in a common framework.

That being said, we differ from prior meta-analytic efforts in several important ways. First, unlike most meta-analyses that include a mix of observational, correlational, and experimental studies (*25*, *46*–*48*), our study restricts itself to conjoint experiments, thus factoring out endogeneity concerns while prioritizing internal validity.

Second, while previous efforts (*49*) also focus on experiments using an individual participant data meta-analytic approach, they comprise all experimental studies on migrant attitudes, are broadly defined (i.e., including both international and internal migration), and deploy a wide array of designs and outcomes: ethnoracial attitudes, group categorization, policy-related perceptions and evaluations, and general immigration policy preferences. We do not take this approach. Recent scholarship cautions against treating immigration attitudes as a single, undifferentiated construct for various reasons (*50*–*52*): Preferences over individual migrants may diverge from broader immigration policy views, policy attitudes may be conditional on selection and rights trade-offs, and public opinion often distinguishes between immigrant stocks and flows. Instead of grouping these widely varying attitudes together, we focus on conjoint experiments about natives' willingness to extend entry, stay, and citizenship privileges to individual foreign immigrants, perhaps the most prominent and extensively validated method used by immigration scholars over the past decade (*30*, *43*, *45*, *53*). This design choice ensures high between-study comparability by keeping a number of elements constant across designs and focusing on a set of similar outcome measures. Our approach also reduces the likelihood, compared to other meta-analytic studies, that issues related to information equivalence (*32*), social desirability (*44*), and external validity (*45*) affect our findings. We show later through meta-reanalyses that immigration policy preferences are a significant moderator of attitudes toward individual immigrants, meaning that treating these two types of outcomes separately yields analytical advantages.

Third, while most prior work draws heavily from European and North American samples (*25*, *47*, *48*), our study covers 36 countries across six continents. Fourth, although prior meta-analyses have examined contextual variation—mainly across regions or migrant types (*25*, *47*, *49*)—our study is distinctive in incorporating (i) a temporal dimension to determine whether different factors have varied over time and (ii) a migration source dimension to distinguish preferences for the migrant stock versus the migrant flow (*52*).

Fifth, we develop a unique attribute recoding and standardization procedure offering several advantages. This procedure allows us to compare effect magnitude both within and between studies as well as between attributes. It also allows us to disaggregate the bundled effects of conjoint attributes that plausibly operationalize multiple concepts (e.g., employment and occupation or religion and religiosity) by developing multiple derived attributes from a single original one to isolate overlapping mechanisms. Our procedure could be built upon and replicated in future meta-reanalyses of experimental studies.

Last, we reanalyze all available studies with background information about survey respondents to assess heterogeneity across nine different individual characteristics: age, gender, income, education, place of birth, ethnoracial group, partisanship, political ideology, and opinions about immigration. We find notable differences in preferences along several of these dimensions, particularly on those related to political predispositions. Thus, we not only confirm prior findings but also advance important findings and recommendations for future research.

Our findings are fourfold. First, meta-analyses confirm prior findings regarding the importance of economic, cultural, humanitarian, and procedural factors in shaping individual preferences.

Second, we address several sources of heterogeneity, both contextual and individual, and find that people from nearly all countries in our collected studies prioritize roughly the same factors—although at varying degrees—when selecting immigrants for admission. At the same time, because Global South studies are relatively few, more data from underrepresented contexts are needed before firm conclusions can be drawn, and the field should prioritize widening the geographic reach of this research agenda.

Third, we disaggregate preferences by time and show that economic concerns have gained explanatory power in recent years. We provide suggestive evidence that these time trends are the result of

low-income segments of the public increasingly preferring highly skilled (relative to low-skilled) immigrants over time, which could be a function of increased sensitivity to the impacts of immigration on the host country's labor market, public finances, and living conditions as immigration has continued to increase across the globe.

Last, we show that despite overall similar views on which types of immigrants are preferable, political predispositions (ideology, partisanship, and baseline positions on the immigration issue) fundamentally shape this debate. Chiefly, individuals on opposite sides of the immigration debate base their admission preferences on notably different considerations. Evaluations of who should be admitted are shaped by prior beliefs about whether immigrants should be welcome at all and by views about the rules and principles that should govern admission. This is an important contribution to the literature and one that sets the present paper apart from previous meta-analytic efforts (*25*, *46*–*49*). This finding is especially relevant for incipient literature showing that different dimensions of immigration opinion—selection criteria, admission levels, and rights—are shaped by one another (*50*–*52*).

Our findings complicate the "culture versus economics" debate that has dominated the literature on public attitudes towards immigration. We show that the relative weight of these two factors in shaping preferences depends significantly on the time period and publics under consideration. Notably, ideologically right-leaning individuals who support right-wing parties with anti-immigrant views are much more likely to take cultural similarity into consideration when evaluating immigrant profiles. Accordingly, we recommend that scholars be careful in disentangling pro- and anti-immigration groups when articulating and testing theoretical expectations about immigration preferences. Similarly, we believe future work should pay careful attention to uncovering and explaining time trends in immigration attitudes.

RESULTS

Baseline preferences

We begin with a few key points essential for interpreting immigrant preferences in a meta-analytic setting. First, the meta-analytic estimates below characterize how much more likely an immigrant is to be selected for admission conditional on switching an attribute from one category to another (e.g., woman to man and youngest to oldest) across the studies (*54*). Second, the preferences captured by these meta-analytic estimates are not majoritarian but rather relative preferences (*54*–*56*). They may indicate that respondents prefer an immigrant who is a woman relative to a man for instance, but this does not necessarily imply that a majority of respondents prefer female immigrants. Third, the effect of any immigrant attribute is conditional on all other attributes that were included in the particular conjoint experiment from which it stems (*54*, *56*, *57*). Thus, preferences based on any attribute may be influenced by what other attributes were included in the study designs. This means that the meta-analytic estimate for any attribute includes information from several conjoint studies with varied inclusion of different attributes. While the meta-analytic estimates are not necessarily majoritarian and are conditional on other attributes, they are still useful in that they reflect not only base preferences but preference intensity as well, allowing for a more effective understanding of what attributes matter most to host country publics (*54*).

Figure 1 reports cross-study meta-analytic estimates of preferences for each of the 26 immigrant profile attributes in standardized units. Our method allows for direct comparisons of effect sizes not only within attributes but also between them. All estimates are from two-sided tests. For each attribute, we report the meta-analytic estimate together with a 95% confidence interval, which summarizes the precision of the pooled effect. We also report a 95% prediction interval on the basis of the estimated between-study standard deviation τ from the random-effects model, which describes the range in which we expect the effect estimate from a new, comparable study to fall under a normal random-effects distribution (*58*, *59*). Last, for ease of interpretation, we summarize this prediction distribution by reporting the proportion of draws that have the opposite sign from the meta-analytic estimate; smaller values indicate that sign reversals across future studies are unlikely under our model. We present forest plots with all underlying study estimates for each attribute in section S1.

Overall, our 26 meta-analyses of immigrant attribute effects on selection suggest that citizens prefer immigrants who are women, younger, highly educated, and currently employed in a high-skill occupation; who do not belong to a religious minority and come from democracies and not from Muslim-majority countries; fled violence or persecution rather than migrated for economic reasons and did not enter the country in an irregular manner; have family ties with citizens and are not single without children; and are already well established in and integrated into the host country. We report these results in detail below.

Demographic attributes

Starting with demographic variables, respondents have a slight preference for female immigrants—being a man leads to a 2-percentage point decrease in the probability of selection relative to being a woman (95% prediction interval: [−5.61, 0.84]; proportion of sign-inconsistent estimates under the prediction distribution: 0.07). Similarly, old age has a negative meta-analytic effect, with a two-standard deviation age increase (~30 years), resulting in a 5-percentage point decrease in the selection probability relative to the younger baseline (95% prediction interval: [−14.21, 4.16]; proportion of sign-inconsistent estimates under the prediction distribution: 0.14).

Socioeconomic attributes

We see clear preferences relating to socioeconomic factors conveying immigrants' potential economic impact on the host country. Citizens are most likely to prefer highly educated immigrants relative to less educated immigrants, with a two-standard deviation increase in immigrants' education (e.g., going from no education to a high school degree), granting them a nearly 7-percentage point advantage for admission (95% prediction interval: [−1.08, 15]; proportion of sign-inconsistent estimates under the prediction distribution: 0.04). Likewise, citizens prefer immigrants who are employed relative to those that are unemployed and those who work in a high-skill occupation relative to a low-skill occupation by about 10 percentage points each (95% prediction intervals: employed [−2.11, 21.53], high-skill occupation [−3.86, 23.93]; proportions of sign-inconsistent estimates under the prediction distribution: 0.05 for employment and 0.08 for occupation). Although there are labor shortages in low-skill jobs and therefore labor market demand for low-skilled immigrants in many of the countries included in our meta-analysis (*60*), this does not appear to translate into public preferences for low-skilled immigrants, consistent with preexisting research showing a

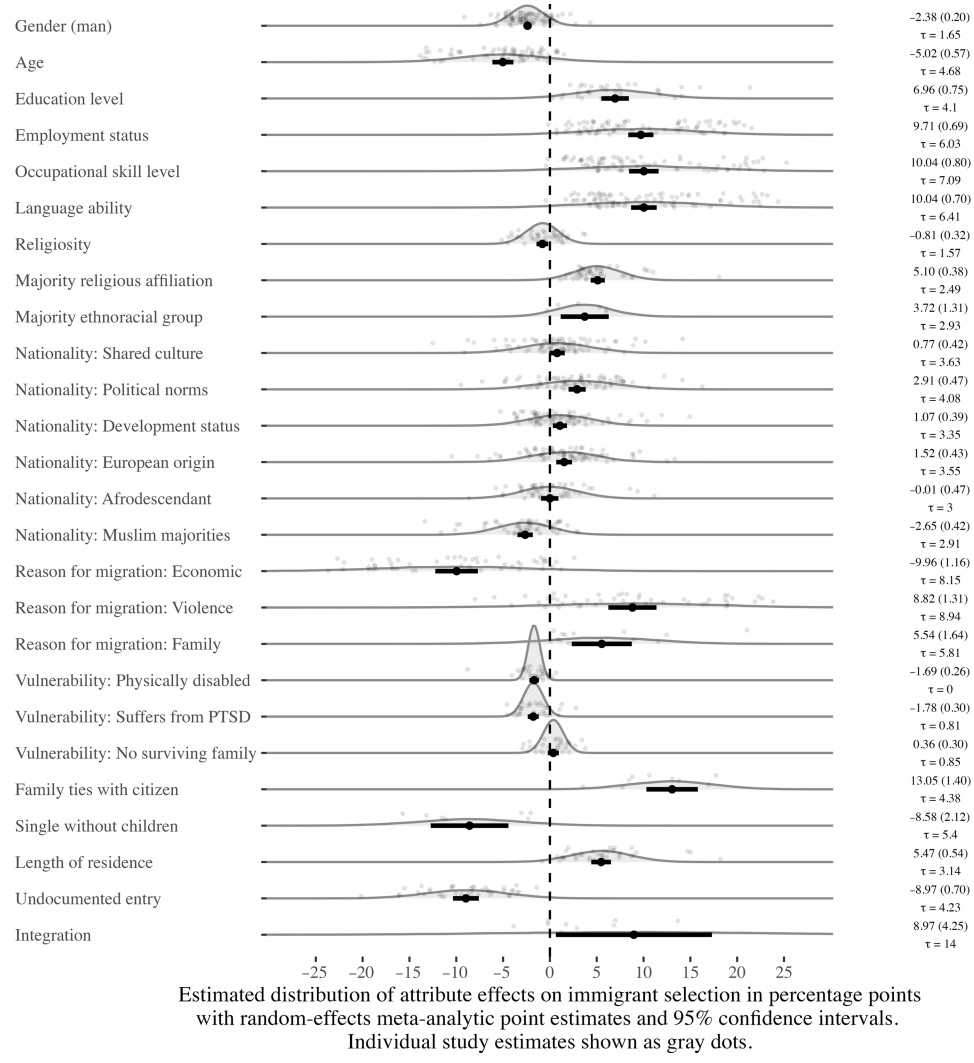

Fig. 1. Overall relative preferences for migrant traits. Random-effects cross-study normal distribution displayed in addition to raw study coefficients. Meta-analytic estimate, estimate standard error, and τ (cross-study estimate standard deviation) annotated on right side of the *y* axis.

generalized preference for highly skilled immigrants because of their perceived economic contributions to society among both the low-skilled and highly skilled host country public (*61*).

Sociocultural attributes

Sociocultural factors are also influential. Higher proficiency in the host country's common language (e.g., going from no ability to good ability) results in a 10-percentage point bonus (95% prediction interval: [−2.52, 22.60]; proportion of sign-inconsistent estimates under the prediction distribution: 0.06). While respondents express a 0.8-percentage point preference for immigrants who are agnostic or atheist relative to those who identify with a major religion, this effect is minimal and appears driven by a dislike of Muslim immigrants in particular (95% prediction interval for religiosity: [−3.88, 2.26]; proportion of sign-inconsistent estimates under the prediction distribution: 0.30). Immigrants who belong to the majority religious group in their host society (e.g., Christians in Western Europe) are favored by 5 percentage points relative to those with minoritarian religious affiliations (95% prediction interval for majority religious affiliation: [0.23, 9.98]; proportion of sign-inconsistent estimates under the prediction distribution: 0.02). Immigrants with the same ethnoracial background as the host country majority are preferred by 3.7 percentage points relative to immigrants from an ethnoracial minority, but we note the corresponding meta-analytic estimate, while statistically significant at the 95% level, is based on only six underlying estimates (95% prediction interval for majority ethnoracial background: [−2.02, 9.45]; proportion of sign-inconsistent estimates under the prediction distribution: 0.10).

Nationality-based attributes

To allow for greater comparability across studies and contexts, we group migrants' nationalities using six distinct categorizations that highlight various dimensions of information derived from the country of origin (details on these categories and their rationale are given in Materials and Methods and in section S8). Regardless of the categorization used, we find mostly small effects on preferences.

We begin by sorting origin countries according to their cultural similarity to the host country, their level of economic development, or their democratic political norms. Unexpectedly, cultural similarity between the host country and an immigrant's country has a null

meta-analytic effect on immigrant admission relative to cultural dissimilarity (95% prediction interval for cultural similarity: [−6.35, 7.88]; under the prediction distribution, effects in future studies are expected to be roughly equally likely to be positive or negative). In addition, respondents slightly prefer immigrants from countries that have more democratic political regimes relative to immigrants from countries that have more autocratic political regimes (a 3-percentage point preference) (95% prediction interval for democratic political regime: [−5.08, 10.90]; proportion of sign-inconsistent estimates under the prediction distribution: 0.24). Likewise, respondents prefer immigrants from more economically developed countries relative to less developed countries (roughly 1 percentage point), but the magnitude of these effects is much smaller than that of most other attributes (95% prediction interval for development status: [−5.51, 7.64]; proportion of sign-inconsistent estimates under the prediction distribution: 0.38).

Given that people do not express strong preferences on the basis of countries' cultural similarity, economic development, or political norms, we also consider whether preferences vary instead on the basis of specific national origin groups. We include three dichotomous attributes indicating whether hypothetical immigrants come from a European-origin country, an Afrodescendant country, or a Muslim-majority one. Relative to non-European nationalities, European nationalities lead to a minute premium of 1.5 percentage points for immigrants (95% prediction interval for European nationality: [−5.43, 8.47]; proportion of sign-inconsistent estimates under the prediction distribution: 0.33). In addition, Afrodescendance produces a precisely estimated null effect (95% prediction interval for Afrodescendance: [−5.89, 5.86]; under the prediction distribution, future studies are expected to yield relatively small effects with positive and negative signs at roughly equal rates). Last, there appears to be a modest penalty of 2.65 percentage points for immigrants from Muslim-majority countries (95% prediction interval for Muslim-majority country: [−8.35, 3.06]; proportion of sign-inconsistent estimates under the prediction distribution: 0.18). All in all, immigrants' national origin produces mostly muted effects on respondents' overall preferences. In subsequent subsections, we assess several sources of preference heterogeneity and find that national origin can matter in some cases.

Procedural attributes

Beyond sociocultural and nationality-based attributes, another set of factors shaping immigrant selection is procedural factors, starting with immigrants' stated reasons for seeking admission into the host country. There is a clear penalty of more than 10 percentage points for economic immigrants relative to other types of immigrants and a clear reward of more than 9 percentage points for immigrants seeking asylum or fleeing violence relative to other types of immigrants (95% prediction intervals: economic migrants [−25.93, 6.01], migrants fleeing violence [−8.70, 26.33]; proportions of sign-inconsistent estimates under the prediction distribution: 0.11 for economic migrants and 0.16 for migrants fleeing violence). We also note the 5.5-percentage point bonus for immigrants seeking family reunification relative to other types of immigrants (95% prediction interval for family reunification migrants: [−5.84, 16.92]; proportion of sign-inconsistent estimates under the prediction distribution: 0.17). Moreover, there is a 13-percentage point premium for those with family ties to citizens of the host country relative to those without family ties (95% prediction interval for family ties: [4.47, 21.63]; proportion of sign-inconsistent estimates under the prediction distribution: ~0.00, effectively 0%). Conversely, there is an 8.5-percentage point penalty for immigrants that have no partner or children relative to immigrants who are migrating with family (95% prediction interval for single immigrants: [−19.16, 2]; proportion of sign-inconsistent estimates under the prediction distribution: 0.06).

How long an immigrant has been living in the host country proves especially influential: Across studies, a two-standard deviation increase in length of residence (roughly 13 years) results in a 5.5-percentage point increase in the probability of selection (95% prediction interval for length of residence: [−0.68, 11.63]; proportion of sign-inconsistent estimates under the prediction distribution: 0.04). Signals of migrant integration, that is, indications that the migrant has social ties with members of the host country's society or strong migrant identification with the host country's dominant national group, also elicit positive preferences from host citizens. We find that the most integrated migrants are preferred by 9 percentage points relative to the least integrated migrants, although this finding is imprecisely estimated (95% prediction interval for integration: [−18.48, 36.41]; under the prediction distribution, about one quarter of draws are sign-inconsistent).

Last, one of the most important attributes in terms of magnitude pertains to whether immigrants entered the host country by following the rules imposed by its immigration system. An undocumented entry (or, in some studies, other irregularities such as inconsistencies in asylum seekers' testimonies) reduces support for an immigrant by about 9 percentage points relative to an immigrant that presents no legal irregularities. This penalty is consistently negative in all studies, ranging between 1 and 20 percentage points in magnitude (95% prediction interval for undocumented status: [−17.26, −0.68]; proportion of sign-inconsistent estimates under the prediction distribution: ~0.01).

Vulnerability attributes

Last, we note that some vulnerable life experiences, such as being physically disabled or suffering from posttraumatic stress disorder (PTSD), lead to migrants incurring small but highly precise penalties from host citizens (estimated between 1 and 2 percentage points; 95% prediction intervals: [−1.69, −1.69] and [−3.37, −0.19], respectively) relative to migrants who do not have these vulnerable life experiences. Having lost one's family (as opposed to not having lost one's family) has a precisely estimated null effect on admission preferences (95% prediction interval: [−1.31, 2.03]).

Sign generalizability

Our meta-analytic attribute effects appear to be largely "sign-generalizable" across observable study estimates for each attribute (see Table 1). That is, the underlying study estimates for each of the 23 statistically significant meta-analytic attribute estimates are largely of the same sign (*62*). Our evaluation of sign generalizability is based on observable attribute study effects and not the prediction interval normal distribution: Six of 23 meta-analytic attribute coefficients are constructed from study coefficients that are all same-signed, and 17 of 23 meta-analytic attribute estimates are constructed from study estimates that are at least 80% same-signed. Thus, for the vast majority of meta-analytic attribute estimates, the underlying study estimates very often have the same sign, suggesting that there is limited study-level heterogeneity that could be uncovered across studies and few designs that could fundamentally challenge our substantive conclusions.

Table 1. Sign generalizability. Proportion of study effects that are the same sign as the meta-analytic effect.

Statistically significant attribute	Meta-analytic coefficient	% of study coefficients with same sign
Gender (man)	−2.38	86%
Age	−5.02	93%
Education level	6.96	100%
Employment status	9.71	99%
Occupational skill level	10.04	98%
Language ability	10.04	99%
Religiosity	−0.81	59%
Majority religious affiliation	5.10	100%
Majority ethnoracial group	3.72	83%
Nationality: Political norms	2.91	77%
Nationality: Development status	1.07	58%
Nationality: European origin	1.52	68%
Nationality: Muslim majorities	−2.65	77%
Reason for migration: Economic	−9.96	92%
Reason for migration: Violence	8.82	85%
Reason for migration: Family	5.54	100%
Vulnerability: Physically disabled	−1.69	94%
Vulnerability: Suffers from PTSD	−1.78	84%
Family ties with citizen	13.05	100%
Single without children	−8.58	100%
Length of residence	5.47	97%
Undocumented entry	−8.97	100%
Integration	8.97	73%

Accounting for study dependency

The random-effects meta-analyses presented above do not account for study dependency by author group, country, and region. In section S15, we show that our results remain substantively unchanged when accounting for these study dependencies using multi-level meta-analytic models (*63*).

Contextual heterogeneity

Having assessed overall preferences for migrants, we now move to disaggregating preferences across studies as a function of region (Global North versus Global South), fielding period (pre- versus post-2020), migration category (asylum seekers versus general immigrants), and migration source (flow versus stock). We conduct formal coefficient equality tests to evaluate whether meaningful differences exist between meta-analytic estimates (see Materials and Methods for details) (*64*).

Region

Existing studies on immigration preferences disproportionately sample populations from the Global North. This geographic concentration may pose some limits: Without more data from the Global South, it is hard to draw definitive conclusions about global public opinion.

That said, preferences for migrant traits are substantially similar across global regions in our collected studies despite the fact that migration policies differ significantly across the Global North and South (*65*). Global North countries included any countries in Europe (not including Turkey) and Australia, Canada, Japan, South Korea, and the United States. All other countries were considered part of the Global South. section S7 presents a complete list of the countries in our analysis. Note that we borrow this classification from the United Nations Conference on Trade and Development to capture degrees of "economic development." We also estimate heterogeneous effects on the basis of three other country-level classifications discussed later in this section.

Figure 2 shows meta-analytic estimates calculated separately for studies of the Global South or the Global North. Preferences for migrants who are female, younger, more educated, employed, and highly skilled and who speak the local language are strong and practically indistinguishable between respondents in either region. By the same token, preferences for migrant nationality are weak in both contexts. Across the 13 attributes for which it is possible to conduct a coefficient equality test between Global North and Global South studies, 11 have indistinguishable subgroup estimates ($P > 0.05$). The two exceptions are the Global North-Global South differences in the effects of coming from a majority Afrodescendant nation and migrating resulting from violence. See table S1 for more details on coefficient equality tests between Global North and Global South studies. Note that we are not able to compare the Global North and South samples on several measures of cultural similarity, including majority ethnoracial group and majority religious affiliation. The effect of cultural similarity is therefore a particularly open question for understudied regions in the Global South.

Figure 3 further breaks down the meta-analyses across regions of the Global North, comparing preferences in North America to Western and Eastern Europe. As is true for the comparison between the Global North and the Global South, North Americans and Europeans have broadly similar preferences for most immigrant attributes. Of the 21 attributes where comparisons can be made between North America, Western Europe, and Eastern Europe, only 8 attributes produce statistically significant differences between regions: gender, majority religious affiliation, national origin political norms, European origin nationality, Afrodescendent nationality, migrating for economic reasons, migrating resulting from violence, and migrating for family reasons. Thus, the majority of attributes (13 of 21 or 62%) do not elicit statistically distinguishable differences across the Global North. Of the eight attributes, six have the same sign across regions, implying a similar reaction to immigrant attributes across the Global North that indicates cross-regional similarity in immigration preferences.

We do see consistent subregional differences for two attributes. First, Afrodescendent national origin has a negative effect in North America but a statistically insignificant effect in Western Europe. Second, preferences for migrants fleeing violence are the strongest in Western Europe, weaker in Eastern Europe, and indistinguishable

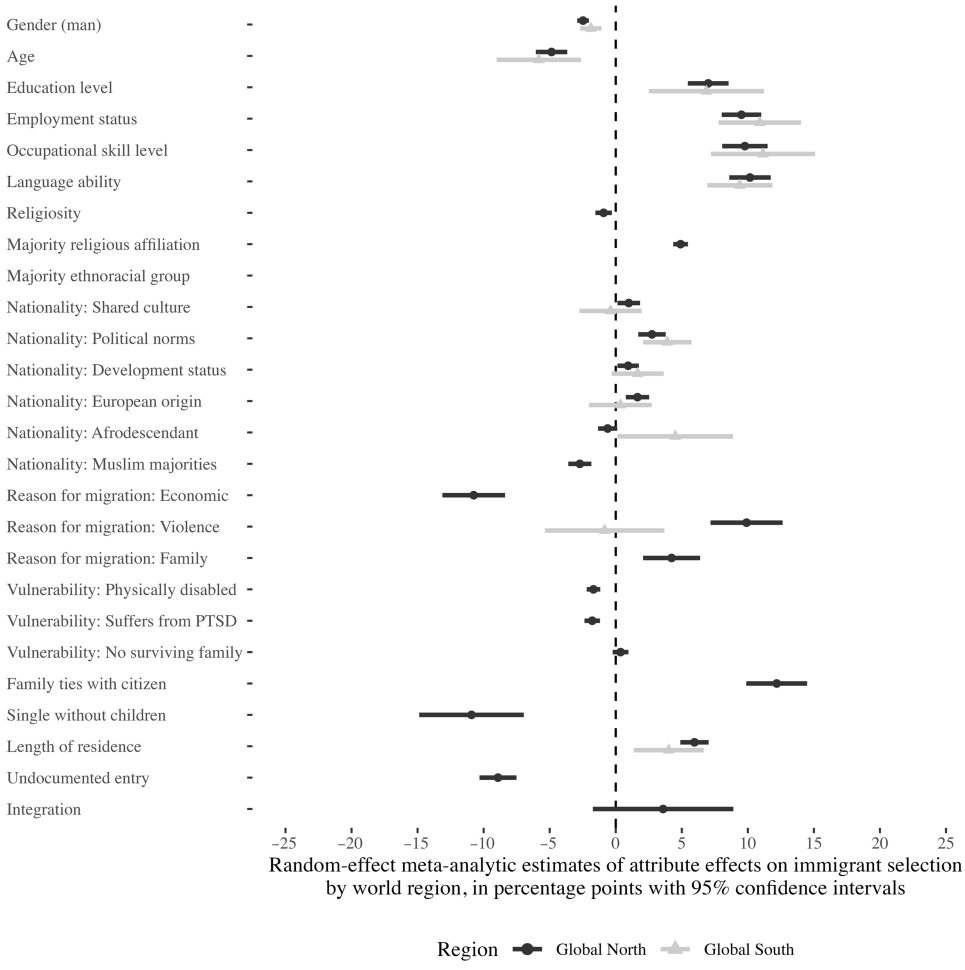

Fig. 2. Preferences for migrant traits in the Global North and South.

from zero in North America. We conclude that while there is extensive similarity in immigration preferences across the Global North, there remain some slight subregional divergences for future research to explain. See table S2 for more details on coefficient equality tests between Global North subregions.

We next rule out a few potential concerns with our results. Experimental designs tend to differ on the basis of the region where studies are fielded (*32*). In section S12, we show that Global South studies were less likely to vary immigrants' religion, whether they come from Muslim-majority countries, whether they entered the country in an irregular manner, and whether they display a vulnerability. The observed similarity in preferences across regions, despite these cross-regional differences in study design, attenuates concerns about information nonequivalency across samples.

That said, the relatively smaller number of studies implemented in some regions like the Global South or Eastern Europe may hurt statistical power when estimating subregional meta-analytic attribute estimates. We note that in our meta-analyses, 18% of observations are from the Global South and 12% from Eastern Europe (see section S7). This amounts to more than 73,000 (16,000) individual survey respondents evaluating more than 260,000 (180,000) immigrant profiles for the Global South (Eastern Europe)—enough data to effectively make cross-regional attribute effect comparisons.

In addition, idiosyncratic studies in the developing world may advance conclusions that diverge from our meta-analytic patterns of cross-regional similarity. For example, Holland *et al.* (*66*) find limited evidence supporting "theories focused on migrants' labor market impacts or fiscal burden" in a single country context (Colombia). We note that individual studies may reach different conclusions from our meta-analyses because our results constitute averages across many countries and studies in a framework of external validity. Scholars should continue to explore the existence of, and reasons for, country-by-country heterogeneity.

Last, there might be finer, unaccounted-for heterogeneities between the Global North and the Global South. For example, some countries within the Global South in our available studies have high incomes and migrant stocks (e.g., Qatar) that are characteristic of some Global North countries, while other countries within the Global South may have low incomes and migrant stocks (e.g., India). Likewise, some Global North countries in our available studies have relatively low incomes (e.g., Hungary) and migrant stocks (e.g., Poland). Therefore, we assess attribute effect heterogeneity by three country-level characteristics that correspond to distinctions between Global North and Global South countries: (i) income, (ii) migrant stock, and (iii) democratic institutions. Consistent with our overall findings, we demonstrate in sections S16 to S18 that there is little preference heterogeneity

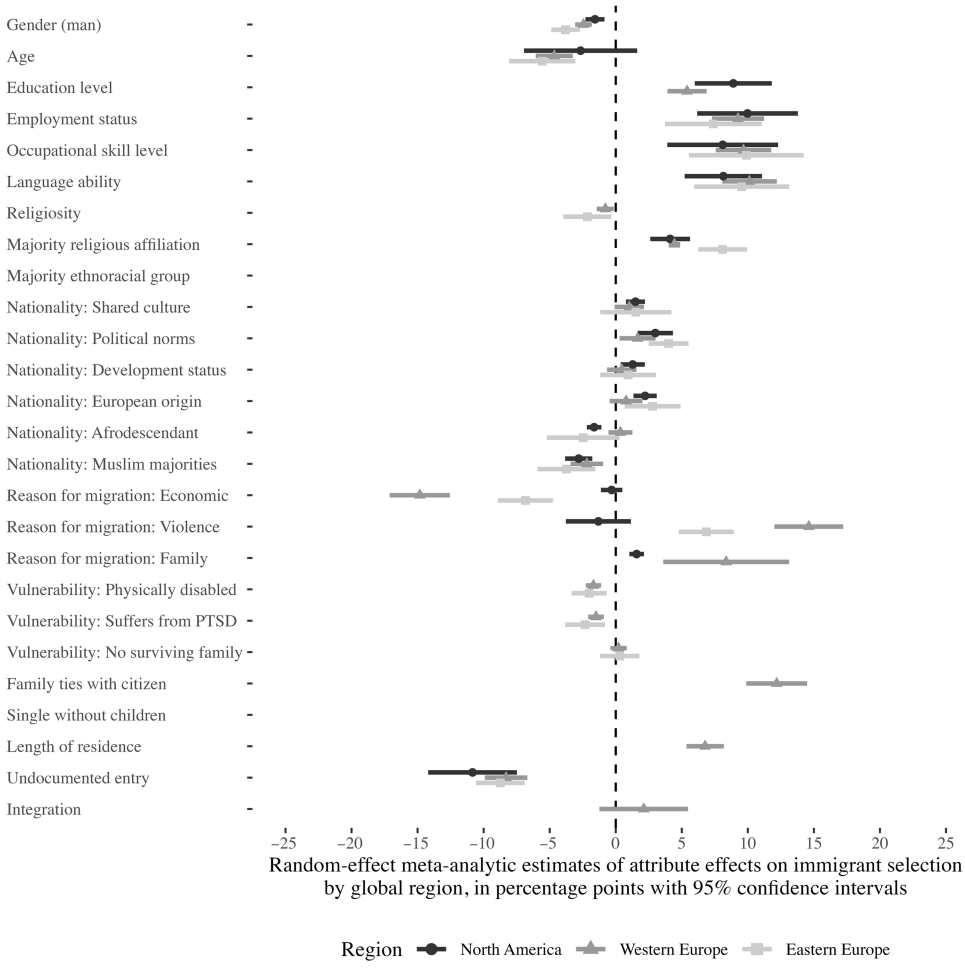

Fig. 3. Preferences for migrant traits in the Global North.

between countries in our sample on the basis of income, migrant stock, and democratic institutions.

All in all, these supplemental analyses suggest that our overarching conclusion that immigration preferences are similar across the world is robust. The immigration preferences reported in Fig. 1 are indicative of near-similarity in global preferences. That said, it is possible that the inclusion of additional studies from understudied countries could eventually change these results, as we consider in Discussion.

Fielding period

Figure 4 provides evidence that preferences for migrant attributes may have evolved over time. In particular, preferences for young, employed, highly skilled, host language–speaking migrants are roughly twice as strong in studies fielded between 2020 and 2024 relative to those fielded in 2012 to 2019 (this split is determined by the median fielding year in our studies). Furthermore, we observe clear-cut preferences in favor of migrants who come from countries with democratic political norms in studies fielded from 2020 to 2024, whereas this indicator has a null effect between 2012 and 2019. Last, preferences for family migrants have increased ninefold between 2012 to 2019 and 2020 to 2024. Formal tests of estimate differences across fielding periods for all aforementioned attributes are statistically significant at conventional levels ($P < 0.05$). All other attributes produce statistically indistinguishable preferences across fielding periods. See table S3 for more details on coefficient equality tests between fielding periods. These results replicate using tercile fielding period splits rather than the median (fig. S63).

These differences are unlikely to be relics of changing geographic coverage or experimental design over time. In table S7.3, we show that the regional coverage of study samples was similar in both time periods, with similar proportions of non-European, non–North American samples obtained in both periods. In section S12, we show that both early and later studies included similar sets of attributes. Of the attributes for which we note temporal heterogeneity, none saw a significant change in use in later studies, reducing concerns about information equivalence between study fielding periods.

To further explore these apparent time trends, we present additional analyses in section S21 subdividing studies by both fielding period and respondent characteristics. With the caveat that these analyses are tentative because of the limits of our data and the lack of preregistered hypotheses, we observe one notable pattern: Over-time shifts in preferences are most evident among low-income respondents. Specifically, low-income respondents are statistically more likely than their higher income counterparts to prefer employed, highly skilled, and language-proficient immigrants in 2020 to 2024 than 2012 to 2019 (fig. S60). Why are low-income respondents

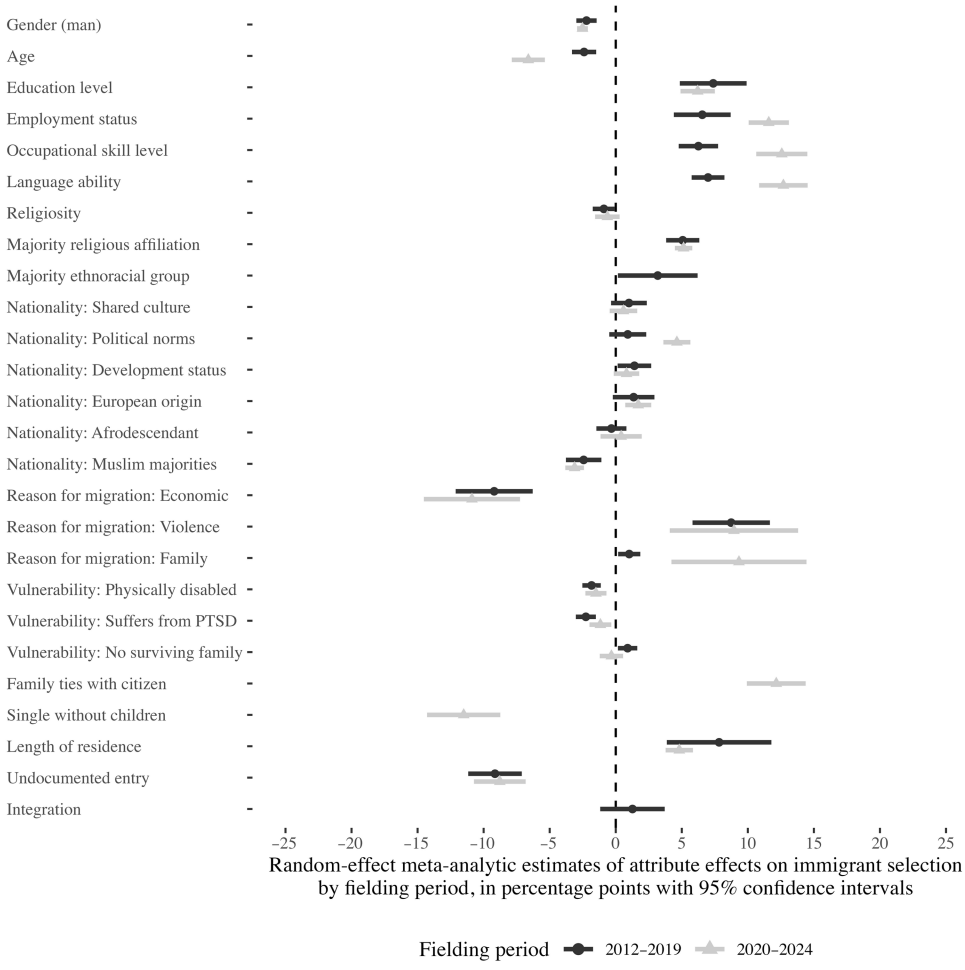

Fig. 4. Preferences for migrant traits across time.

increasingly preferring highly skilled immigrants? One explanation is that as immigration increases over time, these respondents have become increasingly sensitive to economic competition with low-skilled immigrants and may also prefer highly skilled immigrants to facilitate economic complementarities raising their wages (*67*).

In short, there has been a movement toward greater premiums for immigrant skills in recent years. The weight of economic concerns appears to depend on the time period under consideration. An influential review of the literature from 2014 found more evidence in favor of cultural than economic concerns, but it appears that the trend has shifted in more recent years (*61*). This shift merits more research. Likewise, future research could examine and provide mechanisms as to why younger immigrants, family immigrants, and those from strongly democratic countries may be increasingly preferred over time.

Migration category

Figure 5 disaggregates the attribute meta-analyses by whether studies focused on asylum seekers or general immigrants. Host citizens who were asked to evaluate sets of asylum seekers showed substantially weaker preferences on most attribute dimensions than those evaluating immigrants in general. Coefficient equality tests show that the degree of bias against asylum seekers who are older, less employed, lower-skilled, less capable of speaking the local language, and from Muslim-majority countries is roughly half the magnitude of that shown to general immigrants. Likewise, the bias against migrants with legal irregularities is weaker for refugees relative to general immigrants. These cross-category differences are all statistically significant at conventional levels ($P < 0.05$). In addition, respondents make little distinction among the national origins of asylum seekers but differentiate more strongly among migrants in general. Last, coefficient equality tests show that the bias against men and economic migrants (relative to migrants fleeing violence) is statistically significantly stronger when respondents consider refugees than when they evaluate other immigrants more generally, perhaps because economic migration is seen as being inconsistent with asylum-seeking and men are perceived as less sympathetic victims (*68*). See table S4 for more details on coefficient equality tests between studies that focus on refugees versus general immigrants.

Migration source

Previous research suggests that preferences for the migrant stock should be different from those for the migrant flow, as citizens may feel a sense of responsibility to those already in their country that does not extend to foreigners who have not yet arrived (*52*). Host citizens' preferences for skilled and educated migrants should thus be weaker when making decisions about whom to allow to stay in a country than about whom to admit. To evaluate whether this pattern holds in the conjoint literature, Fig. 6 disentangles attribute-based

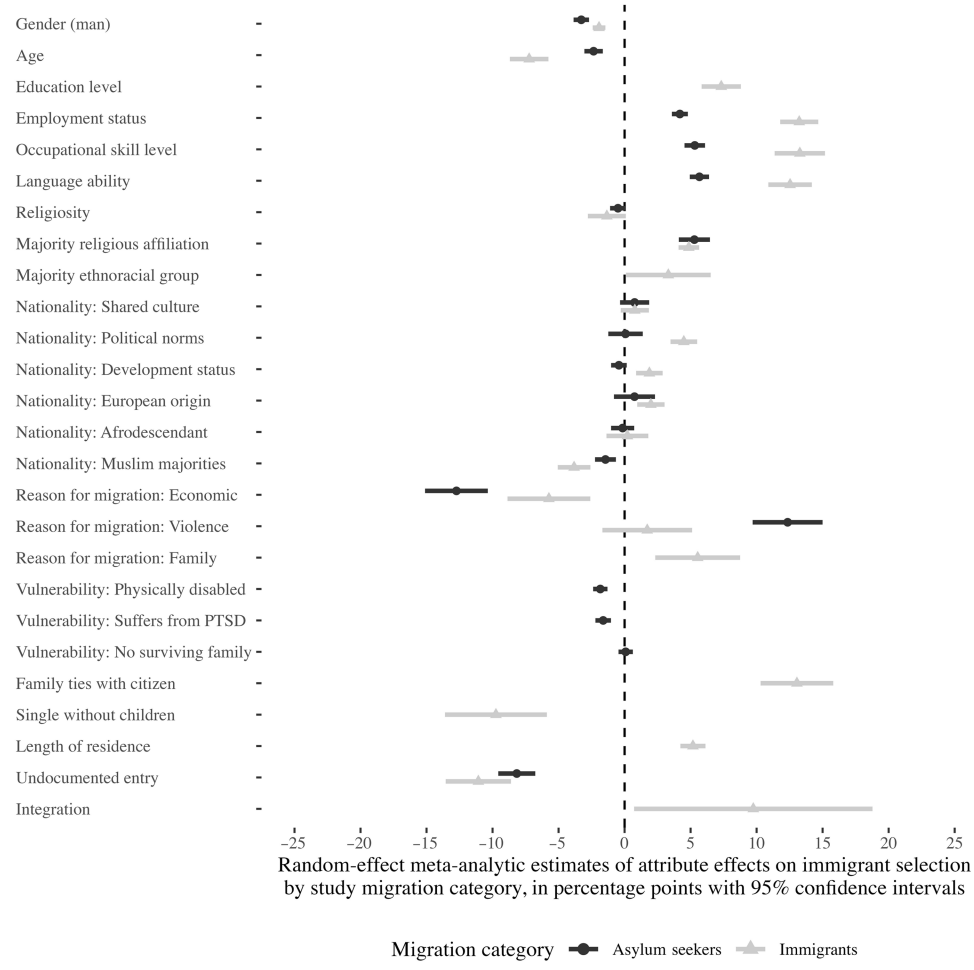

Fig. 5. Preferences for migrant traits in general immigrants versus asylum seekers.

preferences for hypothetical new immigrants (i.e., the migrant "flow") from preferences for immigrants already in the host country (i.e., the migrant "stock").

Overall, both sets of preferences appear largely consistent with each other, with three exceptions. Formal coefficient equality tests suggest that older immigrants are preferred more for "stock" than "flow" decisions. Moreover, education level is a statistically more important factor for the immigrant flow than for the immigrant stock. Whether immigrants are escaping violence or have family ties with citizens matters more when they are already in the host country than when they are seeking to enter it. This may be because immigrants who are fleeing violence or have family ties are perceived as having more legitimate claims to entry. Their continued presence may signal that they have already been granted some form of legal status—on the basis of protection from violence in their origin country or family reunification.

In most respects, however, coefficient equality tests suggest that there is no statistically distinguishable difference in the effect of the other 14 (a vast majority of 82%) attributes for which a stock-flow comparison is possible. Notably, citizens prioritize occupationally skilled and well-employed migrants regardless of whether they have already arrived in the host country. See table S5 for more details on coefficient equality tests between studies that focus on either migrant stock or flow.

Individual heterogeneity

Next, we determine whether preferences for immigrants vary between individuals within studies. In section S2, we report moderation analyses that disaggregate preferences for the 26 immigrant attributes as a function of study participants' age, gender, ethnoracial group, birthplace, educational attainment, and income. In addition, we present moderation analyses for ideological self-placement, immigration predispositions, and partisanship in the main text below. Just as for our contextual heterogeneity approach, we rely on coefficient equality tests to evaluate whether meaningful differences exist between meta-analytic estimates (*64*).

Age

Figure S27 reports estimates separately for the youngest and oldest participants in every study. Coefficient equality tests show that older individuals (relative to younger individuals) are (i) more likely to disfavor male migrants, (ii) more favorable toward migrants who share the same religious background as the host country majority, (iii) more favorable toward migrants who have family ties with host country citizens, and (iv) less favorable toward migrants with physical

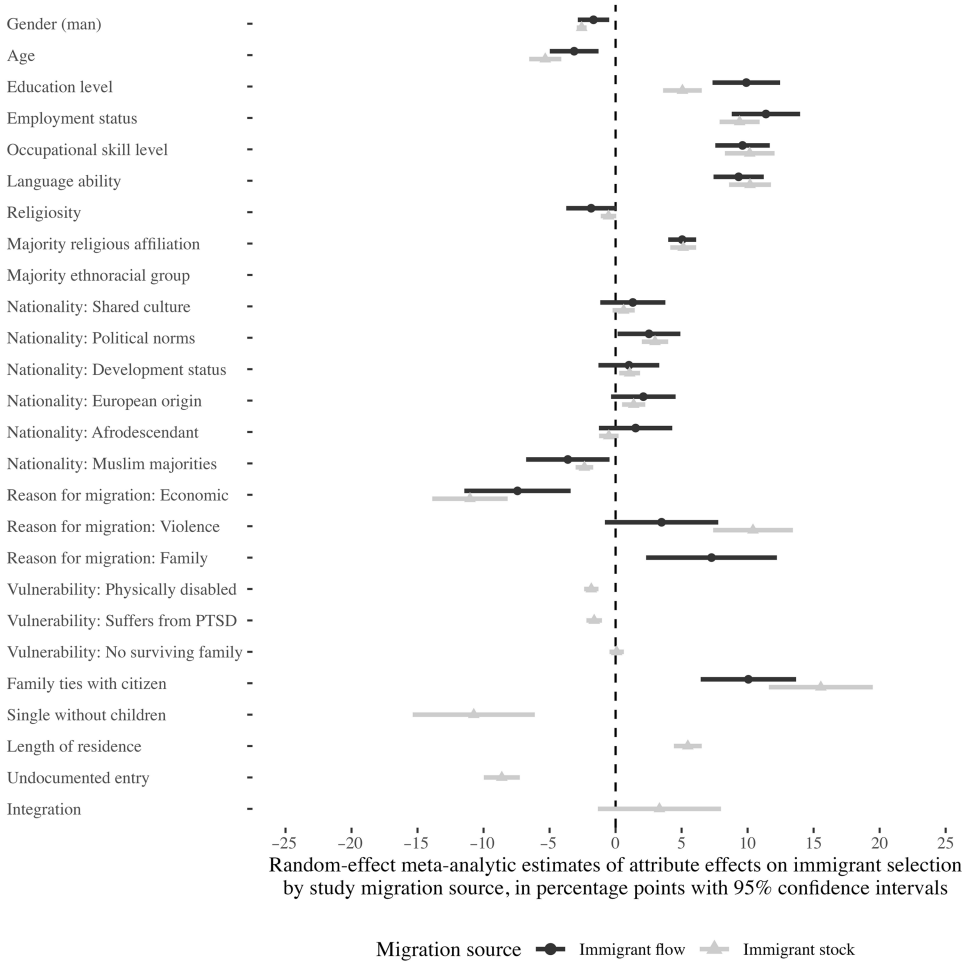

Fig. 6. Preferences for migrant traits, flow versus stock.

disabilities. While statistically significant ($P < 0.05$; see table S6), these are differences in magnitude, not sign. That said, there are no statistically distinguishable differences among the 21 other attributes (84%, the vast majority) where coefficient equality tests can be conducted between age subgroups, implying that preferences for migrants vary relatively little by age overall.

Gender

Figure S28 reports estimates separately for men and women participants. All in all, we observe no gendered differences in immigrant preferences. Formal coefficient equality tests across gender for all attributes are statistically indistinguishable (see table S7).

Ethnoracial group

Figure S29 reports estimates separately for participants belonging to their country's majority ethnoracial group versus a minority group. On the basis of these results, preferences for immigrants are largely the same regardless of individuals' ethnoracial background. Coefficient equality tests across all 15 attributes where comparisons can be made show that the effect of nearly all attributes is statistically indistinguishable across ethnoracial groups (see table S8). However, there are two exceptions. First, the bias against migrants from Muslim majority countries, while still negative and statistically significant, is substantially weaker among ethnoracial minorities. Second, the preference for migrants from European countries is positive and statistically significant for ethnoracial majorities while negative and statistically insignificant for ethnoracial minorities.

Birthplace

Figure S30 reports estimates separately for native- and foreign-born participants. Coefficient equality tests demonstrate that those born in the host country hold a narrowly stronger preference for migrants with family ties with host country citizens compared to respondents who were born abroad (see table S9). That said, the same coefficient equality tests show that preferences vary little as a function of individuals' own migration background, given that nearly all estimates across native- and foreign-born participants for each attribute are statistically indistinguishable from each other ($P > 0.05$; see also table S9).

Educational attainment

Figure S31 reports estimates separately for participants with and without a university degree. Coefficient equality tests show that university-educated participants appear to support migrants escaping violence and oppose those seeking economic opportunities significantly more than participants with no university background. Moreover, the former's penalty for undocumented entries is narrowly and statistically larger than the latter's. That said, these are differences in magnitude, not sign. As a whole, these results indicate little to no gaps in immigrant preferences explained by individuals' education, given that all other

estimates across education levels for each attribute are statistically indistinguishable from each other ($P > 0.05$; see also table S10).

Income

Figure S32 reports estimates separately for participants with the lowest and highest incomes in each study. Coefficient equality tests show that higher-income respondents exhibit stronger preferences for highly educated migrants and for migrants with no surviving family. However, across the 25 attributes where coefficient equality tests can be conducted between income subgroups, 23 (92%, the vast majority) are not heterogeneous ($P > 0.05$; see table S11), implying the existence of broad-based agreement on migrant preferences across the income distribution.

Ideology

Figure 7 reports estimates separately for participants who self-place ideologically as left-wing/liberal versus right-wing/conservative. Considering formal coefficient equality tests (see table S12), a few points are noteworthy. First, right-wing/conservative individuals seem to place somewhat greater premiums on economic factors such as occupational skill level and language ability than their left-wing/liberal counterparts. Second, right-wing/conservative participants appear sharply preoccupied with whether or not migrants are of the same religious affiliation as the majority of the host country, as opposed to left-wing/liberal participants, who place little weight on this factor. Third, ideological divides yield divergent preferences for migrants' nationality, with shared culture, political norms, development status, European, and non-Muslim origin being prioritized by right-wing/conservative individuals but not by left-wing/liberal ones. Fourth, those who identify as left-wing/liberal are less likely to select economic migrants but more likely to select migrants fleeing violence than those who identify as right-wing/conservative. Fifth, slight penalties for migrants who are disabled or have experienced trauma emerge among right-wing/conservative participants but not left-wing/liberal ones. See section S20.1 for a discussion on heterogeneity by ideology accounting for cross-study variation.

Put simply, individuals at opposite ends of the immigration debate rely on different sets of criteria to form their attitudes toward individual immigrants. Existing literature shows that ideological self-placement proxies immigration attitudes, with those on the right more likely to be anti-immigration (*69*, *70*). To the extent that ideological self-placement captures meaningful divisions on immigration, these findings suggest that people's priors on this issue considerably moderate their immigrant attribute preferences, echoing what Bansak *et al.* (*53*) find in the case of European attitudes towards asylum seekers.

Immigration predispositions

Figure 8 reports estimates separately for participants with positive or negative predispositions toward immigration. In general, the same patterns as those reported above for respondent ideology

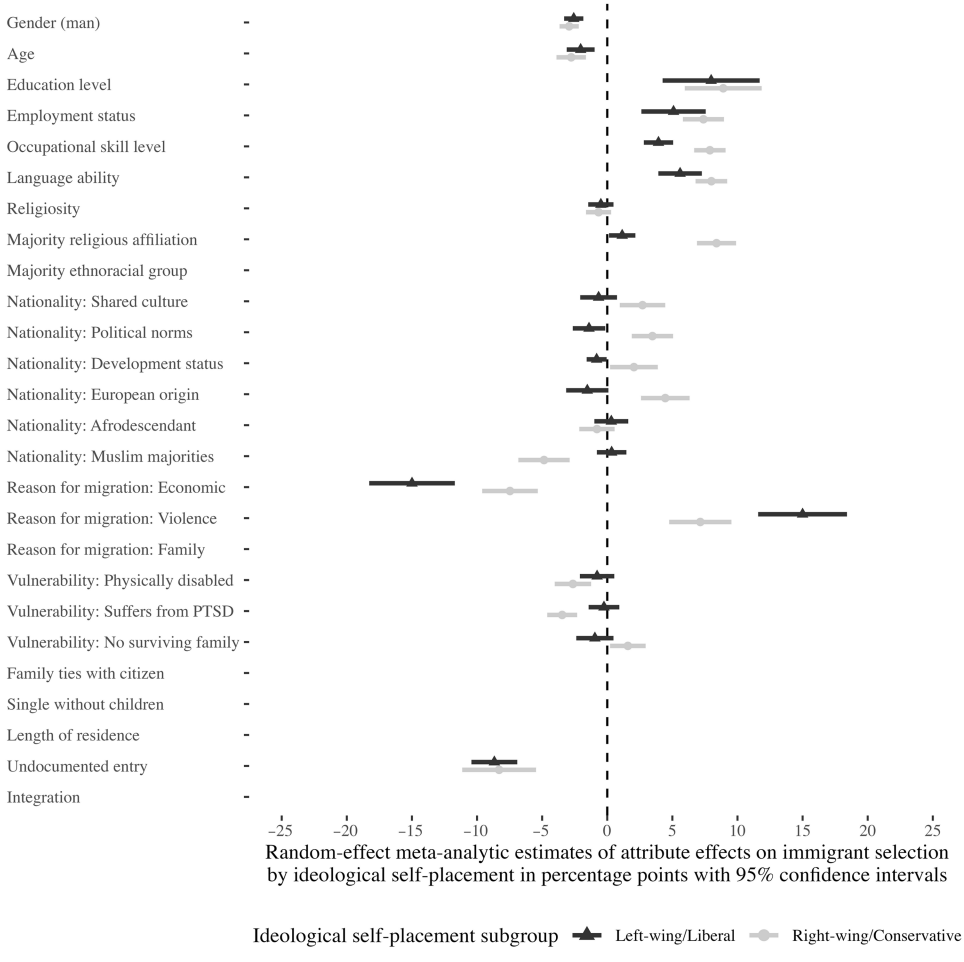

Fig. 7. Preferences for migrant traits conditional on respondents' left/right ideology.

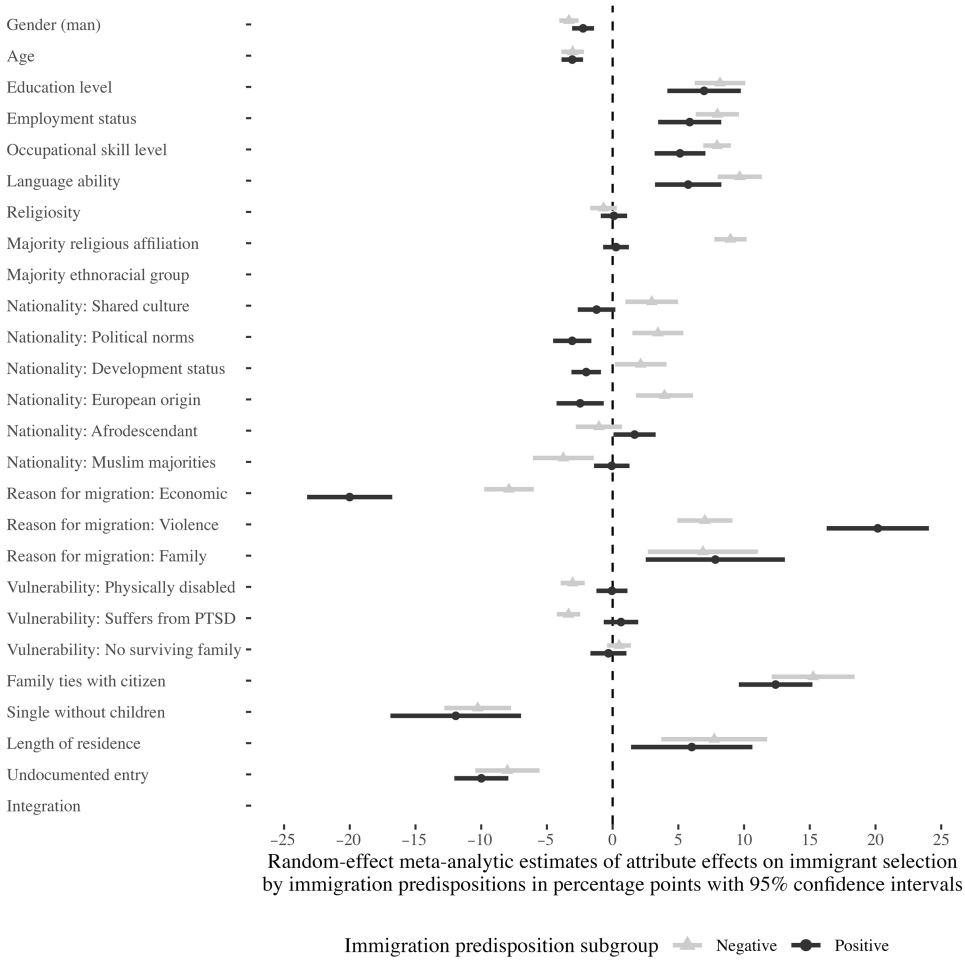

Fig. 8. Preferences for migrant traits conditional on respondents' overall immigration predispositions.

apply here, which confirms that ideological self-placement may suitably proxy immigration predispositions, and vice versa. We highlight in particular that the effects of migrant nationality diverge significantly between pro- and anti-immigration respondents according to formal coefficient equality tests (see table S13). Individuals with negative attitudes about immigration in general display preferences for migrants coming from places with a shared culture, democratic political norms, developed economies, and European-origin populations, while individuals with positive predispositions express preferences against these same categories. This finding suggests that the muted results of nationality in Fig. 1 are likely attenuated by the heterogeneous preferences that are diametrically opposite between groups. See section S20.2 for a discussion on immigration predisposition heterogeneity accounting for cross-study variation.

In short, individuals' immigration predispositions structure their preferences toward individual immigrants to a considerable extent. This finding dovetails with recent work showing that preferences over immigrant selection are interdependent from other immigration policy dimensions, such as admission numbers and postentry rights (*50*). More broadly, it aligns with a growing research agenda that cautions against treating preferences over individual migrants as interchangeable with general immigration policy attitudes (*50*–*52*).

Partisanship

Figure 9 reports estimates separately for supporters of left- versus right-wing parties. Consistent with the results assessing attribute effect heterogeneity by ideology and immigration predispositions, partisanship appears to moderate the effect of several meaningful attributes on preferences toward individual immigrants (see table S14). First, right-wing partisans express stronger preferences than left-wing partisans for immigrants of the same religion of the host country. Second, several nationality-based attributes that may cue cultural considerations are moderated by partisanship. Right-wing partisans, relative to left-wing partisans, express stronger preferences for immigrants from countries with a shared culture, shared political norms, and shared development status. Right-wing partisans also express stronger preferences for immigrants of European-origin and weaker preferences for immigrants from Muslim-majority countries. Although nationality-based attribute differences across partisan subgroups are slightly noisier than those across ideological subgroups, perhaps as a function of imperfect partisan-ideological sorting, these results are consistent with the notion that left- and right-wing partisans have divergent immigration preferences on the basis of nationality attributes. Third, left-wing partisans (relative to right-wing partisans) are more likely to prefer immigrants who are migrating to flee violence while being less likely to prefer immigrants who are migrating for economic reasons. Likewise, right-wing

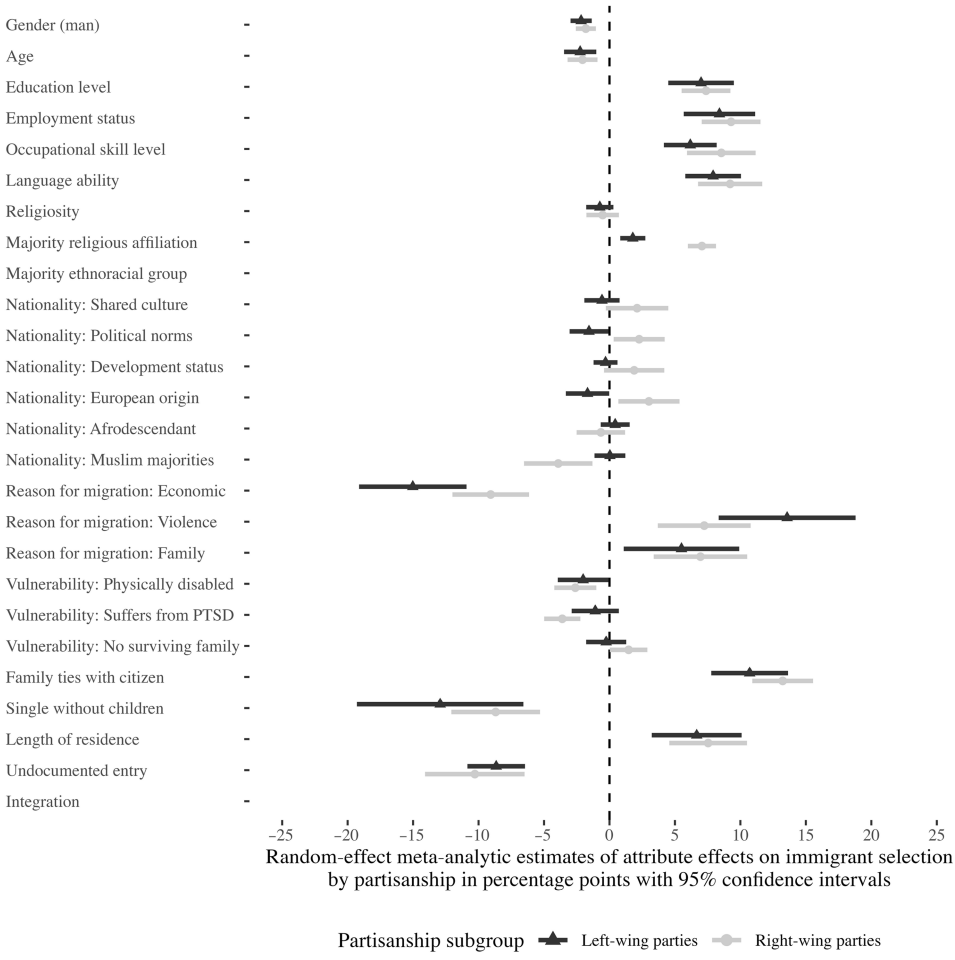

Fig. 9. Preferences for migrant traits conditional on respondents' partisan support.

partisans (relative to left-wing partisans) are less likely to prefer immigrants who suffer from PTSD relative to immigrants who do not. See section S20.3 for a further discussion on heterogeneity by partisanship by accounting for cross-study variation.

In summary, left- and right-wing partisans prefer different types of immigrants, particularly on the basis of cultural, nationality-based, and migration-reason attributes. These findings are consistent with evidence demonstrating a significant role of partisanship in shaping immigration preferences (*71*–*73*) while challenging other conjoint experimental studies conducted in the US and Europe that find broad agreement across partisan lines on which immigrant types are preferred (*30*, *74*).

We note that the correspondence between ideology, immigration predispositions, and partisanship (see section S10) provides strong evidence of partisan-ideological sorting, where left-wing partisans tend to be ideologically left-wing and pro-immigrant while right-wing partisans tend to be ideologically right-wing and anti-immigrant.

DISCUSSION

We compile data from 100 conjoint experiments reported in more than 30 published and unpublished articles in which more than 142,000 unique respondents from a variety of countries evaluated nearly 1.5 million immigrant profiles to meta-analytically assess the effects of 26 attributes on immigrant admission preferences. Unlike many meta-analyses, our approach is advantageous because it evaluates causal effects derived from a single, extensively validated experimental design (the conjoint) and focuses on a common outcome: selection for admission. This ensures both high within-study reliability and high cross-study comparability.

Our meta-analyses reinforce well-established patterns in the prior literature. Men and older immigrants are less preferred by host country citizens. Employed, highly educated, highly skilled, and host language–proficient immigrants are strongly preferred, solidifying the importance of economic factors on immigration preferences. Citizens also prefer immigrants who share the same religion as the majority of the host country. Nationality appears to have a relatively small impact on immigrant preferences, especially for refugees; however, immigrants from Muslim-majority countries face a consistent albeit slightly negative penalty. Economic migrants (as opposed to refugees or family reunification migrants) are much less preferred, as are immigrants without citizen family ties, single immigrants, and those without long-term residence in the host country. One of the most important factors explaining immigrant preference is an irregular entry, which underscores the resonance of legal status in driving public perceptions.

We also make several important contributions. We demonstrate that what past studies have called an immigration consensus in the

US (*30*) or in Western Europe (*74*) may also hold true globally, although more research is needed on attitudes toward immigrants in the Global South. Comparing survey samples gathered from every major region of the world, we observe shared preferences about which migrants should be admitted into the host country. These preferences are uniform among respondents regardless of their age, gender, race, education, or income and are even shared between native citizens and immigrants themselves. We further provide evidence showing that the consistent preference in favor of migrants with high socioeconomic status has increased over time and that individuals differentiate among the traits of refugees less than they do for immigrants in general.

Our findings on cross-regional heterogeneity differ somewhat from those of Weber *et al.* (*49*), who analyze a partially overlapping set of immigration conjoint experiments and emphasize differences between developed and developing country contexts. Their analysis focuses on eight attributes and highlights reason for migration and Muslim religion as the two dimensions where effects differ meaningfully across regions. By contrast, we compare Global North and Global South estimates for a broader pool of 13 attributes and find meaningful heterogeneity between regions for two, Afrodescendant national origin and migration resulting from violence. We view these patterns as largely complementary rather than contradictory: Despite differences in inclusion criteria and classification between the two studies, both sets of results underscore the modal pattern of cross-regional similarity in immigration preferences, with a few pockets of heterogeneity that merit further case-specific investigation.

Another key contribution is our conjoint experiment recoding and standardization procedure, with several advantages. It allows us to compare effect sizes both within and between studies as well as between attributes. Furthermore, we are able to disaggregate the bundled effects of conjoint attributes that plausibly operationalize multiple concepts (e.g., employment and occupation or religion and religiosity) by developing multiple derived attributes from a single original one. In particular, the variety of nationality measures we develop (shared culture, political norms, development status, European origin, Afrodescendance, and Muslim-majority) allows us to tease apart different conceptions of nationality and culture, going beyond what the current literature does and expects regarding these features.

Last, we provide evidence that segments of the mass public at opposite ends of the immigration debate rely on different sets of criteria when evaluating individual immigrants. While nationality-based attributes such as shared culture, political norms, development status, European-origin, Afrodescendance, and Muslim-majority status have minimal effects when assessing overall preferences (see Fig. 1), disaggregating them by ideology, immigration predispositions, and partisanship produces a notable pattern of heterogeneous, opposite-signed effects (see figs. S33 to S35). To the extent that nationality approximates relevant cultural characteristics, cultural factors matter especially for members of the public who are predisposed against immigrants. This heterogeneity explains some of the relatively muted effects of cultural attributes identified in the preexisting literature. More research is needed to unpack the mechanisms driving these patterns of preference heterogeneity.

Our findings highlight four key areas for future research. First, through our data collection, it became clear that the majority of studies in this literature focus on the US and Europe. Given that there are relatively few experimental studies of immigration attitudes in the Global South, our finding relating to a global consensus in preferences should be taken with caution. There might be divides between the Global North and the Global South not captured by our data, which include relatively few studies of nondemocratic or developing countries. Future research should continue to explore immigration preferences outside of Europe and the US and, once there are more studies in a more diverse set of countries, future meta-analytical work should reassess our findings.

Second, our evidence points to the existence of strong sources of heterogeneity along some dimensions (e.g., political predispositions) but not others (e.g., geography, sociodemographic markers, and socioeconomic status). Mixed effects of cultural attributes in this literature may be explained by divergent preferences rooted in underlying political divisions that cancel each other out. Future research should continue to explore relevant sources of heterogeneity that may shed more light on the (conditional) influence of particular factors that may shape mass preferences for immigrants.

Third, our meta-analyses of immigration conjoint experiments may inform future meta-analyses of other types of experiments such as field audits, behavioral correspondence tests, or messaging experiments. As explained previously, we do not include these experimental designs in our analyses to strengthen internal validity. Yet, it may be fruitful for future research to compare effects in the conjoint framework to those from other types of experiments to uncover relevant differences and gauge external validity.

Fourth, the vast majority of immigration conjoint experiments rely on textual descriptions as opposed to visual, aural, or other formats. Nontext treatments may produce different attitudinal responses that may better characterize real-world attitude formation (*75*). However, among the 100 studies in our sample, only 3 use nontextual information, namely images (*76*, *77*). We conducted an additional targeted search for nontext immigration conjoint experiments and were unable to identify any that met our inclusion criteria (see the Materials and Methods and section S22 for details). Given these data limitations, we are unable to assess treatment mode differences. That said, prior research in the immigration attitude domain provides little evidence of treatment effect differences between textual, visual, and animated stimuli (*78*). Future research may use nontextual stimuli to mitigate ecological validity concerns inherent to textual stimuli and assess treatment mode effects in immigration conjoint experiments.

MATERIALS AND METHODS

Review scope and procedures

We follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (*79*). We sought out published and unpublished studies that used a conjoint survey experimental design to study host citizen attitudes toward foreign immigrants. The inclusion of both published and unpublished studies alleviates potential concerns over publication bias, which may inflate meta-analytic estimates because of filtering on statistical significance (*80*–*83*).

We established five criteria of inclusion for our review. These criteria were meant to ensure high within-study reliability and high cross-study comparability. Specifically, we sought studies that were comparable in terms of their methodology and scope to ensure that study participants faced comparable decision sets.

First, included studies were survey experiments with conjoint designs asking respondents to evaluate randomly generated individuals, which vary across various attribute dimensions (*43*). While conjoint experiments often resemble other forms of survey experiments, especially factorial experiments, the latter typically vary fewer attributes at once and show greater variability in terms of the dependent variable measured by the researcher. They also often include additional information that is less typical in a conjoint paradigm, such as images, news material, and stimuli meant to induce priming effects. See the work of Valentino *et al.* (*84*) and Iyengar *et al.* (*51*) for examples of factorial designs not included in this review. Because of this variability, we focus on conjoint experiments that follow the experimental paradigm introduced by Hainmueller and colleagues (*43*, *45*, *61*). By holding the experimental paradigm constant, this choice reduces worries about information nonequivalence across studies (*32*).

Second, we only included studies that ask survey participants to evaluate individual migrant profiles as deserving a specific benefit (chiefly entry or residence in a country) or in terms of their overall benefit to the destination country. This rule excluded studies that asked survey participants to categorize migrants along some other dimension (*85*–*87*), studies that asked participants to evaluate groups instead of individuals (*88*–*91*), and studies that asked participants to evaluate migration policies (*92*–*94*).

Third, randomly generated migrant profiles used in the study needed to portray foreign immigrants, not citizens of the destination country. This criterion ruled out studies that investigated attitudes toward internal migrants (*95*, *96*) or nonimmigrant temporary visitors (*97*). In some cases, the experiment design included both internal migrants and host citizens as possible attribute levels. In those cases, we dropped any profile or profile pairing that presented an individual who was not a foreign migrant from the replication data.

Fourth, we only include studies with participants who are citizens of the host country. This rule excluded studies that investigated attitudes between migrant groups (*98*). In some cases, studies surveyed both host citizens and nonnaturalized migrant populations. In these cases, we dropped the migrant participant responses. Fifth, for a study to be included, we needed to obtain its complete replication data file.

To be as thorough as possible in our search for relevant studies, we pursued two strategies. First, we conducted a systematic search of the published literature using online databases. Two paid research assistants searched various literature databases and search engines including Web of Science Core Collection, JSTOR, Current Contents Connect, Preprint Citation Index, and Google Scholar. We conducted queries on the basis of keywords such as "immigrant," "migration," "asylum," "refugee," "conjoint," "experiment," "attitude," "perception," "support," and "opinion." Some query examples are "immigra* AND conjoint," "migra* AND conjoint," "refugee AND conjoint", and "asylum AND conjoint."

These searches were completed between June and August 2023 and yielded 1812 unique study references. Two coauthors of the present article reviewed the titles and abstracts of each entry and identified 102 potentially relevant published articles, preprints, working papers, theses, and dissertations. Then, two coauthors of the present article assessed whether each study met four criteria for inclusion in the meta-reanalysis. This procedure yielded 19 studies that met our first four criteria for inclusion. We were able to obtain replication data for 17 of these studies by either locating their replication packages online, chiefly on Harvard Dataverse, or directly requesting the data from the authors.

Second, the review team continued to seek out additional relevant studies in the context of their own ongoing professional scholarly activities. In this way, 26 additional studies were identified, and their inclusion was validated by two reviewers as with the previous set. We were then able to secure replication data for 17 of these studies. All in all, as of August 2025, we found 45 articles, preprints, working papers, theses, and dissertations that met our inclusion criteria and were able to obtain replication data for 34. Adida *et al.* (*99*), Alrababa'h *et al.* (*100*), Argote and Daly (*101*), Arias and Blair (*102*), Aviña (*103*), Bansak *et al.* (*53*), Bansak *et al.* (*104*), Becker *et al.* (*105*), Berinsky *et al.* (*106*), Clayton *et al.* (*107*), Cogley *et al.* (*108*), Czymara and Schmidt-Catran (*109*), Denney and Green (*110*), Donnaloja (*111*), Donnaloja and Vink (*112*), d'Urso and Bonilla (*113*), Findor *et al.* (*114*), Flores and Schachter (*115*), Getmansky *et al.* (*116*), Hainmueller *et al.* (*45*), Hainmueller and Hopkins (*30*), Hedegaard (*117*), Hedegaard and Larsen (*74*), Hedegaard and Larsen (*118*), Holland *et al.* (*66*), Igarashi *et al.* (*119*), Kao and Liu (*120*), Malik *et al.* (*77*), Margalit and Solodoch (*52*), Rasband (*121*), Shockley and Gengler (*122*), Steele *et al.* (*123*), Wimmer *et al.* (*124*), and Zhirkov (*125*). See section S5 for a list of data sources for each article.

Data

Many of the articles found in our search reported results from multiple experimental designs that sometimes varied the outcome (e.g., rating versus choice), the baseline description of the migrant held constant across all profiles (e.g., "asylum seekers" versus "immigrants"), the attributes or attribute levels included in the randomization scheme (e.g., four versus seven educational attainment levels), and the presentation of the attributes (e.g., paragraph vignette versus table). Many also repeated similar designs in multiple years or applied the same design to respondent samples in different countries. For our purposes, we treat each separate design, year, or country within a given article as a separate experimental design.

In total, we include 100 separate conjoint experiments in our analyses. These include 15 designs in the US, 49 in Western Europe, 12 in Eastern Europe, 7 in Latin America, 4 in the Middle East, 4 in East Asia, 4 in Sub-Saharan Africa, 3 in South and Southeast Asia, and 1 design each in Canada and Australia. The studies were fielded between 2012 and 2024 (see section S7). Note that 52 of these studies, amounting to roughly 60% of our data (878,748 profiles and 78,730 respondents), come from three papers (*53*, *104*, *124*). In section S6, we show that excluding either of these megastudies or all from the analysis does not considerably affect our substantive findings.

Variables

Studies tested a wide variety of migrant attributes and attribute levels. Some attributes (e.g., gender) were used in many experimental designs, whereas others were unique to a given study. On the basis of a systematic review of the included studies, we focus on all attributes that were used in five or more designs across at least two separate articles. These attributes were the migrant's gender, age, education, employment status, job occupation, host language proficiency, religion, ethnoracial background, country of origin, reason for migrating, migrant vulnerability, family ties, length of residence, adherence to migration law, and degree of integration with the host community.

Because study designs typically use unique sets of attribute levels even when the attribute itself is common across migrant conjoint experiments, ensuring comparability across studies required recoding the attribute levels using categorization schemes that were applicable across contexts. The coding schemes were developed before the analysis of the results. Our coding rules sought to maximize the comparability of attribute levels across study designs and contexts and provide conceptual clarity about the theoretical construct(s) underlying each attribute. We also sought coding schemes that did not rely on researchers' subjective interpretations and that would be easily replicable by other scholars. In some cases, attributes plausibly operationalized multiple concepts (e.g., employment and occupation or religion and religiosity). For these, we developed multiple derived coded attributes from a single original attribute.

Accordingly, we developed 26 derived migrant attributes, which for easier comparability collapse attribute levels onto a single dimension using ordinal or binary coding schemes. These attributes are given as follows: gender; age; education level; employment status; occupational skill level; language ability; religiosity; majority religious affiliation; majority ethnoracial group; nationality: shared culture; nationality: political norms; nationality: development status; nationality: European origin; nationality: Afrodescendant; nationality: Muslim majorities; reason for migration: economic; reason for migration: violence; reason for migration: family; vulnerability: physically disabled; vulnerability: suffering from PTSD; vulnerability: no surviving family; family ties with citizen; single without children; length of residence; undocumented entry; and integration. Details about each of these coding schemes are given in section S8.

We note in particular that we derive six distinct quantitative measures of country of origin characteristics. This is necessary because studies often include unique countries of origin, which would otherwise be difficult to compare systematically. In addition to this methodological necessity, this operationalization allows us to make more precise claims about what migrants' nationality signals to hosts, given that nationality plausibly communicates multiple considerations. [See (*124*), (*126*), and (*91*) for examples of the wide variety of meanings national origin can connote.] Thus, we uncover more generalizable patterns in preferences instead of zeroing in on idiosyncratic views on particular nationalities.

Conjoint experiments typically use two possible outcome variables: a choice indicator of whether the survey respondent believes that the migrant profile at hand should be admitted or given some other privilege in the host country (often forced as a choice between two profiles but sometimes allowing for the selection of either immigrant, neither, or both) and a rating variable allowing respondents to evaluate the immigrant on a Likert scale. To make our analysis comparable across study designs, we opt for the nonforced-choice outcome when available, as forced-choice outcomes artificially require respondents to select exactly half of the immigrant profiles that are presented to them—a feature that comes with its limitations [see (*56*, *127*, *128*)]. When this outcome is not available, we dichotomize the rating into a nonforced-choice variable indicating whether a given immigrant profile received a rating above the midpoint of the scale. When a design includes a forced choice only, we use it as is. Within our sample, 55% of profiles were evaluated with the nonforced choice or dichotomized rating measure, and of these, 54% were selected by respondents. The remaining 45% of profiles that only used forced-choice measures had a 50% selection rate by design (see section S9 for details). In section S11, we replicate our meta-analyses for each outcome type.

In addition to the randomly assigned immigrant attributes, we make use of available respondent background characteristics to construct nine moderator variables: age, gender, ethnoracial group, birthplace, educational attainment, income, ideological self-placement, immigration predispositions, and partisanship. We code dichotomous indicators for gender (man/woman), ethnoracial group (majority/minority), education (university/no university), and birthplace (native-born/foreign-born). For age, income, ideology, immigration predisposition, and partisanship, we code continuous variables ranging from the lowest (0) to highest (1) value or group. For ideological self-placement, coded from right (0) to left (1), measurement often varies across countries, with the liberal-conservative scale most often used in US studies, in contrast to the left-right scale used elsewhere. When separate ideological scales for economic and cultural issues are available, we follow the same procedure to rescale each from 0 to 1 and then take the average. For immigration predispositions [coded from negative (0) to positive (1)], we use pretreatment items tapping into respondents' preferences on immigration policy, evaluations of immigrant groups, and perceptions about the impact of immigration or immigrant groups on the host society. When multiple items are used, we average them into an additive index to reduce measurement error (*129*). For partisanship (coded from right- to left-wing party identification or support, with right-wing as 0 and left-wing as 1), we use the party identification item alone when available; otherwise, we proxy it using vote choice. In US studies, we leverage the sevenfold scale incorporating identification strength when available. In European and Latin American studies, we rely on left-right scores from the Chapel Hill Expert Survey (*130*).

Readers should note that overlap between all of the aforementioned attribute and moderator variables in our data is far from perfect. That is, the 26 attributes and 9 individual moderators we focus on in our analyses are not uniformly present in each of the 100 conjoint experiments in our sample. In section S12, we provide an overview of variable availability across studies. For summary statistics characterizing all variables, we use the main text's analyses in addition to Pearson's ρ correlation coefficients across all variables (see sections S9 and S10).

Estimation

For each randomly assigned immigrant attribute, we are interested in three quantities of interest: overall preference for/against the attribute, heterogeneous preference for/against the attribute based on context, and heterogeneous preference for/against the attribute based on survey respondent individual characteristics.

Baseline preferences

To uncover overall preferences, within each study, we regress the outcome variable on the randomly assigned attribute of interest, one attribute at a time. Following Gelman (*131*), we scale continuous attributes by two standard deviations to allow for direct effect size comparisons within/between attributes and within/between studies. This allows us to compare treatment effect sizes across continuous and binary attributes as well as between studies.

Continuous attributes include age; education level; employment status; occupational skill level; language ability; nationality: shared culture/political norms/development status; integration; and length of residence. Binary attributes include gender; religiosity; majority

religious affiliation; majority ethnoracial group; nationality: European/Muslim/Afrodescendant; reason for migration: economic/refugee/family; vulnerability: disabled/PTSD/no family; family ties with citizen; single with no children; and undocumented entry.

To estimate attributes' effects on probabilities of selection, we compute 1303 linear probability models (a separate model for each attribute within each study) of the following form

$$\text{Choice}_{rtp} = \alpha_0 + \alpha_1 \text{Attribute}_{rtp} + \varepsilon_r$$

where the unit of observation is the respondent-task profile. The dependent variable denotes whether a given immigrant profile p in task t was selected for admission, permanent residence, or citizenship by respondent r. The parameter of interest is α_1, which denotes the percentage point change in the probability of selection. Following current recommendations for repeated-measures experiments (*132*), we compute cluster-robust (CR2) standard errors adjusted at the respondent level. Whenever survey weights are available, we use them to balance the sample to reflect the general population.

This procedure is cognate to that proposed by Hainmueller *et al.* (*43*) and, for binary outcomes, is equivalent to the average marginal component effect (AMCE) for those outcomes. For nonbinary attributes that have been recoded onto ordinal scales, the estimate is not strictly equivalent to the AMCE but represents a linear parameterization of the AMCE across coded attribute levels.

For each attribute, we then input study-level estimates and standard errors into a random-effects meta-analytic model. This model can be represented as follows (*64*)

$$\hat{\theta}_k = \mu + \epsilon_k + \zeta_k$$

where $\hat{\theta}_k$ represents the observed effect size for study k, μ is the mean of the distribution of true effect sizes, ϵ_k captures the sampling error within study k, and ζ_k reflects the deviation of the true effect size for study k from the overall mean. This model is particularly suitable when dealing with studies that are not perfectly homogeneous, which is often the case in meta-analyses involving diverse study designs and populations (*133*). We use the rmeta package in R to compute all meta-analytic estimates.

The random-effects model contrasts with the more widely known fixed-effects model, which assumes that all studies come from a single, homogeneous population, which implies that any differences in observed effect sizes are solely due to sampling error. In the context of immigration conjoint experiments, where studies differ significantly in their methodology, the populations they sample, and their time period, the random-effects model offers a more conservative approach by accounting for both within-study sampling error and between-study variance. Also, note that the random-effects model recognizes that the true effect size varies across studies. The model's assumption of exchangeability, where ζ_k is independent of study k, means that no prior expectation exists that one study's true effect size will deviate more from the mean than another's.

Contextual heterogeneity

We assess whether preferences differ across world region, fielding period, migration category, and migration source. To do so, we subset our study-level estimates and standard errors and input them into separate meta-analytic models. For region, we differentiate between countries in the Global North (1134 estimates, 81 studies) and the Global South (169 estimates, 19 studies) as well as between countries in North America (190 estimates, 16 studies), Western Europe (701 estimates, 49 studies), and Eastern Europe (193 estimates, 12 studies). For time, we differentiate between two fielding periods using the median fielding year as the cutoff: 2012 to 2019 (634 estimates, 45 studies) and 2020 to 2024 (669 estimates, 55 studies). We use the median fielding year as the cutoff given that it is a well-known statistical quantity allowing for sufficient statistical power to evaluate attribute effect heterogeneity by time period. The choice of the median over some arbitrary cutoff also reduces researcher degrees of freedom. For the migration category, we separated studies focused on preferences toward asylum seekers (595 estimates, 34 studies) from those assessing views on general immigration (708 estimates, 66 studies). For the migration source, we divide studies on the basis of whether they feature hypothetical immigrants looking to enter the host country (257 estimates, 25 studies) or immigrants already in the host country looking to gain permanent status, avoid removal, or receive citizenship (1046 estimates, 75 studies).

To determine whether estimates were statistically different between subgroups, we conduct formal coefficient equality tests using the equation established by Borenstein *et al.* (*64*) for assessing subgroup differences in meta-analytic contexts and acquire a t-statistic

$$\frac{b_1 - b_2}{\sqrt{\text{SE}_1^2 + \text{SE}_2^2}}$$

where b_1 and b_2 are the meta-analytic estimates for each subgroup (e.g., Global North and South), and SE_1 and SE_2 are the standard errors for the respective groups. We convert the quantity outputted by the equation to a P value to assess the statistical significance of the difference. We consider groups to have different preferences (reject the null hypothesis of similarity) when $P < 0.05$.

Individual heterogeneity

We assess how preferences for immigrants vary between survey respondents on the basis of several individual-level moderators: age, gender, ethnoracial group, birthplace, educational attainment, income, ideological self-placement, immigration predispositions, and partisanship. Within each study, for each attribute and moderator combination, we compute a linear probability model with a multiplicative interaction term as follows

$$\text{Choice}_{rtp} = \beta_0 + \beta_1 \text{Attribute}_{rtp} + \beta_2 \text{Moderator}_r + \beta_3 \text{Attribute}_{rtp} \times \text{Moderator}_r + \varepsilon_r$$

As with our approach for estimating baseline preferences, the unit of observation remains the respondent-task profile, we compute cluster-robust (CR2) standard errors and use survey weights when available.

Here, we are interested in the percentage point change in the probability of selection for different values of the moderator. For continuous moderators (age, income, ideology, immigrant predispositions, and partisanship), we derive slopes for (i.e., the effect of) each attribute at the minimum versus maximum level of the moderator. For binary moderators (gender, ethnoracial group, birthplace, and educational attainment), we derive slopes for each subgroup. We then aggregate estimates for each level or subgroup into separate random-effects meta-analytic models.

To assess differences between these subgroups with different respondent traits, we use the same coefficient equality tests that were described above for detecting contextual heterogeneity. As discussed above, data on each of these nine characteristics are not

available across all studies included in this meta-reanalysis. In section S13, we replicate the main results reported in Fig. 1 on subsets of studies with available data on respondents' age, gender, ethnoracial group, educational attainment, income, ideological self-placement, immigration predispositions, and partisanship. Substantively, the preferences that emerge are the same as those for the whole set of studies.

Evaluation of possible bias in included studies

We evaluate the risk of bias through two approaches: (i) assessing study-specific biases and (ii) examining publication bias. Study-level assessments considered methodological factors such as whether studies used nationally representative samples, whether studies used randomization constraints, whether respondents exhibited significant item nonresponse, and whether studies took place during time periods that might shift public opinion about immigration. After the bias assessment, we evaluated whether the inclusion of possibly biased studies affected our results and found that they did not.

To detect selective reporting, we drew funnel plots of effect estimates plotted against the number of observations. The rough symmetry of the plots suggests minimal publication bias, indicating that smaller studies do not systematically report more extreme effects (*134*). Together, these assessments provide a comprehensive evaluation of potential biases in the review. These two analyses are reported in section S14.

Preregistration

The analysis of individual heterogeneity by respondent characteristics was preregistered at OSF (https://osf.io/tv5mf/overview). Our final analyses deviate from this preanalysis plan in three important ways. First, the number of attributes derived from the studies increased as we continued to collect data for additional studies and more comparisons became possible. Second, coefficient equality tests were added to formally evaluate meta-analytic differences between subgroups. Third, we assess other moderators besides partisanship, ideology, and immigration attitudes, including both contextual (e.g., time and space) and additional individual (e.g., demographic) factors. Analyses other than the individual heterogeneity in attribute-based preferences were not preregistered.

Human subject research

We did not conduct new research on human subjects. All studies in the meta-analysis were fielded by other researchers in working papers and published papers.

Supplementary Materials

This PDF file includes:

Sections S1 to S23
Figs. S1 to S63
Tables S1 to S33

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