A Meta-Analysis of Attitudes Towards Migrants and Displaced

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2024

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July 29, 2024[§]   Word count: 10,093

Abstract

Since the early 2010s, social scientists have conducted (survey-) experimental studies that explore what factors drive public attitudes towards migrants to understand who provokes backlash and who is welcomed. We conduct a systematic meta-analysis building on 83 studies that experimentally vary migrant characteristics to assess attitudes towards migrants. The study has several findings: a) sociotropic concerns play a key role: individuals are more welcoming towards migrants that contribute to the economy through their professional occupation, education or language skills; this evidence is particularly strong in developed countries compared to developing countries, b) there is no evidence hosts evaluate migrants through the lens of egocentric economic concerns, c) cultural concerns are important; in particular a persistent anti-Muslim bias; d) humanitarian concerns also shape attitudes toward migrants; particularly towards those that are forcefully displaced in contrast to economic migrants.

1 Introduction

Migration has polarized public opinions for decades and has become increasingly politicized. Today, migration plays a key role in many elections around the globe, including in the United States, the United Kingdom, India and South-Africa (Kustov, 2024; Dionne and Wellman, 2024; Hardy, 2024). The salience of migration in political discourse and media has given rise to anti-immigrant attitudes (e.g., Benesch et al., 2019; Hopkins, 2010), and recent political

wins for anti-immigrant parties (Halikiopoulou and Vlandas, 2020; Arzheimer, 2018; Cools, Finseraas and Rogeberg, 2021). This development has gone hand in hand with, and in many cases in response to, an increase in conflict-related migration (see Figure 1). Consequently, a key question is what shapes people's attitudes towards migrants?

Over the last two decades, this question has become an important topic of research in social sciences, in particular in political science and sociology (e.g., Bansak, Hainmueller and Hangartner, 2016; Czymara and Schmidt-Catran, 2017; Flores and Schachter, 2018; Hainmueller and Hiscox, 2010; Hainmueller and Hopkins, 2015; Helbling and Traunmüller, 2020). These studies explore whether economic, cultural or humanitarian concerns by host populations shape which migrants are welcomed and who provokes a backlash. In the context of developed countries, studies often explore attitudes towards economic migrants (e.g., Hainmueller and Hopkins, 2015) and towards refugees and asylum seekers (e.g., Adida, Lo and Platas, 2019; Bansak, Hainmueller and Hangartner, 2016). The limited work exploring these attitudes in developing countries largely focuses on the determinants of hosting forcibly displaced persons (e.g., Alrababa'h et al., 2021; Hartman and Morse, 2020; Peisakhin, Stoop and Van der Windt, 2024, Forthcoming).

This study contributes to the literature on migration by undertaking a meta-analysis of the existing studies on differential responses to migrants.[1] After two decades of research, it is important to take stock of existing evidence, summarize what factors drive attitudes towards migrants, and identify areas that require further scholarly attention. We encourage researchers to use this evidence to engage in cumulative studies. The second motivation to conduct a meta-analysis is the ability to address questions that individual studies cannot tackle. Attitudes towards migrants may differ, for example, by the country context in which migrants are hosted. In addition, different factors may influence how host populations perceive economic versus forced migrants. By aggregating evidence from diverse studies, this

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[1]We define a migrant as any person that voluntarily or involuntarily moves permanently or for an extended period of time away from their original community. This includes refugees, asylum seekers, internally displaced persons, migrants for economic reasons, for family reunification or due to climatic changes, and internal migrants.

meta-analysis can provide critical new insights.

We systematically collected data from 83 academic studies that experimentally vary migrant characteristics and subsequently assess attitudes towards these migrants. This type of survey-experimental setup was first introduced by Hainmueller and Hiscox (2010) - who manipulated the skill level of migrants - but has since been picked up in disciplines as diverse as political science, psychology and sociology; and has methodologically moved to multi-dimensional conjoint experiments with Hainmueller and Hopkins (2015) as an influential and often cited pioneer study in the field. We focus on the nine migrant characteristics that are used by most studies to measure the four major theoretical explanations put forward by the literature: egocentric economic concerns, sociotropic economic concerns, cultural concerns and humanitarian concerns. Based on these studies we conduct multiple meta-analyses – one for each migrant characteristic – to analyze how different key concerns in the host population shape attitudes towards migrants.

Figure 1: Studies Included in the Meta-Analysis and Forced Displacement
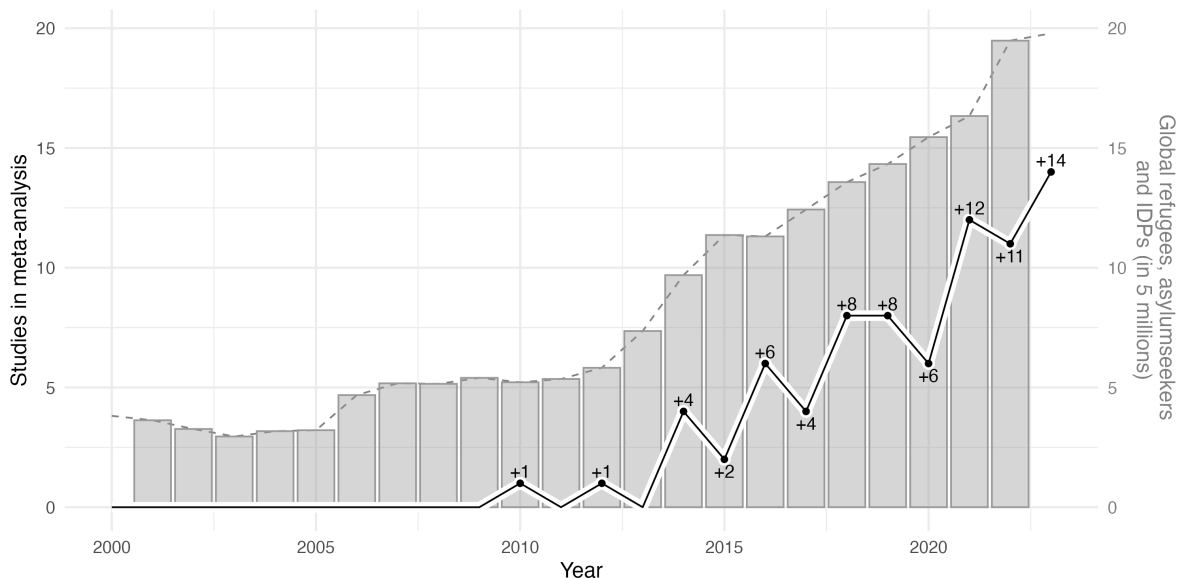
Notes: Studies added to the meta-analysis from 2000 to 2023 (black solid line). Plot includes a comparison to global estimates of the forcibly displaced according to UNHCR (grey bars and dashed line). Plot excludes unpublished studies captured in the meta-analyses.

Our meta-analyses reveal several key findings. First, we find no evidence for the im-

portance of egocentric economic concerns related to fears of labor market competition from migrants with similar skill-sets. Second, sociotropic economic concerns shape attitudes towards migrants, and in particular when these migrants are not forcibly displaced. Third, cultural concerns around the origin and religion of migrants lead to context-specific rejections of certain migrant profiles; and there is a widespread anti-Muslim bias. Fourth, humanitarian concerns in particular shape the reception of forcibly displaced populations. As a result, one of the least preferred migrant profiles across most, if not all, studied contexts and respondents is a male economic migrant that is Muslim, unemployed, and has low education and language skills. While it may be context-dependent whether it matters if this person is from the Global South, a specific region or country, this seems to exclude many of the migrants currently moving across the world.[2] Fifth, exploring heterogeneous effects, we show that sociotropic economic concerns more strongly shape attitudes towards economic migrants while hosts are driven by humanitarian concerns to accommodate the most vulnerable when assessing the reception of forced migrants. Finally, we show that sociotropic economic concerns matter less to host populations in developing countries compared to developed countries.

The study concludes with recommendations for further research on the interaction between sociotropic concerns, labor demand and welfare states; on a more universal conceptualisation of what constitutes humanitarian concerns or migrant vulnerability; and on the specific cultural aspects that matter for the reception of migrants. We further emphasize that a systematic understanding of attitudes towards migrants requires a systematic study of these phenomena in *all* areas where migration actually occurs, and that more academic evidence is needed particularly from potential hosts in developing contexts.

2 Attitudes towards Migrants: Theoretical Explanations

Understanding what factors determine people's attitudes towards migrants has received much scholarly attention in the last two decades. We summarize this rich body of literature and

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[2]Muslims make up the second-largest share of international migrants; almost 60 million (Pew Research Center, 2012).

group the factors that shape attitudes towards migrants into four major families, following the existing classification in the literature.

A first explanation relates to economic concerns on the basis of job competition with migrants. According to this argument, people tend to oppose migrants that may compete with them on the labor market; e.g., those migrants that have a similar skill-set. (e.g., Scheve and Slaughter, 2001; Mayda, 2006). Later studies, however, found little evidence for these *egocentric economic concerns* and argued that most hosts – regardless of their skill-set – tend to be opposed to low-skilled migration (e.g., Hainmueller and Hiscox, 2010; Helbling and Kriesi, 2014; Hainmueller and Hopkins, 2014, 2015).

The second family of factors also relates to economics but argues that hosts are concerned about the broader economic implications of migration. Here, the argument is that people are more welcoming toward migrants whom they perceive to contribute to the overall economy; those that bring in human capital, and those that contribute more to tax revenues than that they cost in public services. Empirically, these so-called *sociotropic economic concerns* manifest themselves in a preference for high-skilled migrants with higher levels of education, employability and language skills (Bansak, Hainmueller and Hangartner, 2016, 2023; Naumann, Stoetzer and Pietrantuono, 2018; Adida, Lo and Platas, 2019).

The third set of factors relates to the perceived threat that migrants may pose to hosts' identity – be it cultural, religious, ethnic or national (Hainmueller and Hopkins, 2014). Such concerns have manifested themselves, for instance, in a preference for Christian over Muslim migrants in Western countries (Bansak, Hainmueller and Hangartner, 2016, 2023; Adida, Lo and Platas, 2019; Helbling and Traunmüller, 2020), and in support for more restrictive migration policies by white Americans for Hispanic compared to white migrants (Hartman, Newman and Scott Bell, 2014).

Finally, recent research has highlighted humanitarian concerns as a fourth explanation of people's attitudes towards migrants. This argument relates to the perceived deservingness, resulting in a preference for refugees who migrated because of violence, persecution or climate

change compared to economic migrants (Bansak, Hainmueller and Hangartner, 2016, 2023; Helbling, 2020). Humanitarian concerns further manifest themselves in a preference for vulnerable migrants, e.g., those whose family has been affected by conflict, those fleeing with children, and female migrants (Bansak, Hainmueller and Hangartner, 2016, 2023; Adida, Lo and Platas, 2019; Alrababa'h et al., 2021).

Table 1 provides a summary overview of these four broad types of concerns that may drive attitudes towards migrants, and formulates expectations related to specific migrant characteristics. The table further provides an overview of the related meta-analyses we conduct, which we return to below.

Table 1: Drivers for Attitudes Towards Migrants and Meta Analysis

Concerns	Logic	Expectation	Attributes (Levels)	N	Results
Egocentric economic	Concerns about labor market competition by immigrants with similar skill-set	Negative attitudes towards migrants with similar skill-set	Migrant vs respondent education (Mismatch | Match)	19	Figure 2
			Migrant skills vs respondent income (Mismatch | Match)	11	Figure 3
Sociotropic economic	Preference for migrants who are perceived as more likely to contribute to the overall economy	Preference for employability: high education and skills, economically active, language skills	Occupation (Professional occupation | Worker/Farmer | Unemployed)	33	Figure 4
			Language skills (Fluent | Broken | Unable)	23	Figure 5
Cultural	Concerns about a threat to an identity: religious, ethnic, cultural, national	Preference for culturally similar: same religion or ethnicity, anti-Muslim bias, place of origin matters	World region (Global North | Global South)	38	Figure 6
			Migrant vs respondent origin region (Mismatch | Match)	26	Figure 7
			Religion (Christian | Muslim)	36	Figure 8
Humanitarian	Preference for vulnerable profiles that are deserving of help	Preference for female migrants and those fleeing from conflict	Gender (Men | Women)	35	Figure 9
			Reason for migration (Economic migrant | Climate migrant | Family reunification | Forced migrant)	24	Figure 10
Heterogeneity analyses:					
Economic vs forced migrants	Humanitarianism drives attitudes towards forced migrants and economic concerns those towards economic migrants	Conditional on migration reason, stronger preferences for vulnerable or employable profiles.	Interaction between reason to migrate and attributes		Figure 11
Developing vs developed countries	Welfare and securitization shape preferences across the world	Preferences differ between developing and developed countries	Heterogeneous effects by developing versus developed countries		Figure 13

Notes: "Logic" and "Expectation" follow from the literature. "Attributes (Levels)" indicate the attributes (and levels) used to investigate the theoretical concern. "N" indicates the number of studies that have variation in this attribute/ attribute combination. "Results" indicate where the meta-analysis results can be found.

In addition to exploring how these four concerns determine people's attitudes towards immigrants, we undertake two additional analyses. First, public discourse, media and policy-making often make a distinction between economic and forced migrants, assuming that economic migrants move freely and voluntarily while displaced migrants have little to no agency in their movement decision. Initially, scholars particularly studied attitudes towards economic migrants (see Hainmueller and Hopkins, 2014); and only recently turned their focus to IDPs, refugees and asylum seekers (e.g., Adida, Lo and Platas, 2019; Bansak, Hainmueller and Hangartner, 2016, 2023; Hartman, Morse and Weber, 2021). Although critical scholars emphasize that this dichotomization oversimplifies real-world complexities, the labels undoubtedly carry discursive significance (Hamlin, 2021; Bakewell, 2021; Erdal and Oeppen, 2020). This study explores if the reason for migration shapes how other migrant characteristics - like their their employability and vulnerability - are evaluated. We expect that economic concerns matter especially when evaluating economic migrants, while perceptions of forced migrants are more strongly shaped by humanitarian concerns.

Second, we also explore heterogeneous attitudes towards migrants across developing and developed countries. High and low income countries differ in the social welfare provided by the state, as well as the scale of economic and forced migration (e.g., Alrababa'h et al., 2021). Developing countries carry the main burden of hosting the forcibly displaced, and are often affected by conflict and disaster themselves. In contrast, high income countries are more commonly recipients of high-skilled and economic migrants. Securitization and politicization of migration in public discourse also differs across political systems and world regions (Krzyżanowski, Triandafyllidou and Wodak, 2018; Buonfino, 2004), potentially shaping differential responses to migrants.

3 Meta-Analysis Approach

3.1 Data Collection

We targeted all academic papers published since 2000, as well as unpublished manuscripts, which 1) aim to explain variation in attitudes towards migrants broadly defined, and 2) experimentally vary migrant characteristics.[3] We ran a keyword search in *Scopus* that included a substantive criterion (study must include at least one keyword from each of the three following categories: 1) hosting, accepting, preference, inclusion, sentiment, 2) refugees, displaced people, internally displaced people, migrants, asylum seekers, forced displacement, 3) immigration, migration, displacement), a methodological criterion (include at least one keyword from experiment, experimentally, conjoint, vignette, random) and practical criteria (journal article, published between 2000 and 2023, subject area social sciences or multidisciplinary, English language). Appendix A provides further details. This search yielded 1,175 studies. We manually screened the studies' abstract and title, identifying 90 relevant studies. Replication files were publicly available for 32 studies. We contacted the authors of the remaining studies, and obtained data for an additional 39 studies.

In addition to this search, we obtained data from two other sources. First, we identified seven studies from citations within the included studies. Second, we undertook a systematic search of the major online registration databases in social sciences in order to incorporate pre-registered studies where data may have been collected but the paper was not (yet) publicly available.[4] We identified an additional nine unpublished studies; for five we were able to obtain the data. In total, 83 studies are included in the meta-analysis. Table 2 summarizes the data collection.

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[3]This excludes studies that experimentally vary the framing of migrants, the effect of migration on host populations or the scale of migration. We also exclude studies that only manipulate ethnicity but do not explicitly prime that the person to be evaluated is a migrant.

[4]These registries are: EGAP, AEA RCT Registry, REED and RIDIE. Appendix A provides further details.

Table 2: Overview Data Collection Process

Approach	Studies
Universe of possible studies through *Scopus* key word search	1,173
Relevant studies	90 (8%)
Studies with replication files directly available	32 (36%)
Studies with replication files provided upon request	39 (43%)
Excluded studies because no replication files were available/provided	19 (21%)
Studies identified through citation network	7
Solicitation of unpublished working papers	5
Total number of studies included in meta-analysis	83

Notes: Overview of the data collection process.

3.2 Standardization across Studies

The studies differ across several dimensions and require standardization for the meta-analysis. First, there is variation in the dependent variable under study. Most studies investigate the admission of a migrant into the country (30/83). Other popular outcome variables are measures to gauge respondent approval for policies that allow more migration (9/83), pro-immigrant sentiment (7/83), and the granting of citizenship to migrants (6/83).[5] We consider these different outcomes to measure a latent common concept of attitudes towards migrants.

Second, the studies vary in their experimental design, yielding different data types. The most popular design, with 35 studies, is the conjoint experiment in which the dependent variable is either binary (if respondents are forced to choose between two hypothetical migrant profiles) or continuous (if migrant profiles are evaluated on a scale). In other designs – such as vignette and factorial experiments or behavioural games – the dependent variable is binary, continuous, or measured on a Likert scale. We standardize these measurements by z-standardizing the outcomes using the sample mean and standard deviation in each study. Higher scores indicate more positive attitudes towards migrants.

Third, studies differ in their independent variables; i.e., the migrant characteristics under

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[5]We present all studies' outcome measures in Appendix D.3, where we also assess whether these different outcomes drive heterogeneity in our findings.

study and their translation into corresponding experimental attributes. To achieve common support, we fix semantic differences across studies (e.g., ensuring that the labels for the attribute 'gender' are consistently labelled as "male" and "female"). We also group attribute levels together where useful (e.g., professions like "doctor" and "scientist" are grouped into one "professional occupation" category), or split up attributes (e.g., household composition is split into an attribute describing gender and an attribute describing whether a migrant has children).[6] In total, we identified 37 different migrant characteristics.[7] In the main text, we focus on the nine migrant characteristics that are used by most studies to measure the four theoretical explanations of interest.[8] Table 1 lists these characteristics and provides information on how many studies vary that characteristic. For egocentric economic concerns, we focus on (mis)matches between respondents' and migrants' education levels, and (mis)matches between high and low skilled migrants amongst high and low income respondents. To assess sociotropic economic concerns, we look at attributes that manipulate migrants' occupation and language skills. Cultural concerns are explored by varying attitudes towards migrants from the Global South and North, on differences in the reception of migrants from the same region as the respondent or from a different region, and on migrants' religion. Finally, we assess humanitarian concerns by focusing on the gender of the migrant and their reason for moving.

3.3 Estimation Strategy

We are interested in the change in respondent attitudes induced by different levels of a migrant characteristic. We therefore fit the following model, which we estimate for each migrant characteristic separately.

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[6]The mapping of individual study's characteristics and attribute levels to those in this study can be found in Appendix A.5.

[7]Figure A2 in the appendix maps the presence of attributes across all studies.

[8]Results for all 37 attributes can be found in Appendix D.1.

$$\hat{\theta}_{kj} = \sum_{j=1}^{J} \delta_j D_{jk} + u_k + \sigma_k \epsilon_k, \quad u_k \overset{\text{i.i.d}}{\sim} N(0, \tau^2); \epsilon_k \overset{\text{i.i.d}}{\sim} N(0, 1), \tag{1}$$

where $\hat{\theta}_{kj}$ represents the standardized marginal means for study k under attribute level j.[9] D_{jk} is an indicator for the different levels of migrant characteristic j in study k. Note that different studies may have different levels j of a specific migrant characteristic. If a study does not explore the migrant characteristic, it is not included. The number of studies that are used to estimate Model 1 thus differs by migrant characteristic. Finally, u_k is the random effect for this study, and ϵ_k an independent error term. Our interest is in δ_j, which captures the average preference induced by each level j, after taking account of intrinsic heterogeneity between studies captured by the variance of the random effects, τ^2. We fit Model 1 with both a random-effects ($\tau^2 > 0$) and a fixed-effect ($\tau^2 \equiv 0$) specification.[10]

3.4 Model Fit and Publication Bias

To assess model fits, we conduct the omnibus test of moderators to examine the joint significance of all the attribute level dummies' coefficients in each model (the Q_M-test). This test is supplemented with commonly used log-likelihood and Bayesian information criterion (BIC) statistics. To formally evaluate between-study heterogeneity in effect sizes, we use the modified test of residual heterogeneity to examine effect variability left unexplained by the level dummies (the Q_E-test). In general, we find that the random-effects model outperforms the fixed-effect model, providing a better fit to the data and yielding wider confidence inter-

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[9]We choose marginal means instead of the similarly popular average marginal component effects (AMCEs) as our preferred measure of respondent preference to permit arbitrary combinations of different levels under a common attribute across studies, to avoid dropping otherwise justifiably comparable studies that only lack a shared reference level in such cases (Leeper, Hobolt and Tilley, 2020). To the extent that we are comparing (differences between pre-adjusted) marginal means profiled by these levels of the shared attribute, the substantive interpretation of our results would closely resemble that of a classical AMCE's except for the relaxation of a pre-determined reference level.

[10]These models address different questions (Viechtbauer, 2010). The random-effects model asks the more general question of "what is the average true effect in the larger population of studies", possibly extending beyond the studies included in the meta-analysis; whilst the fixed-effect model asks the more restricted question of the average true effect in the narrower set of studies included in the meta-analysis. Our dual-model strategy is motivated by this subtle difference of implied estimands at the theoretical level (see also Cheung, 2015; Schwarzer et al., 2015).

vals for the estimated meta-effects. Additionally, we find statistically significant ($p < 0.001$) evidence for effect heterogeneity between studies, which is not explained by random variation alone. We therefore prioritize reporting random-effects estimates below whenever necessary.

To address and mitigate potential publication bias that may affect our meta-study, we include unpublished studies and check for this issue using funnel plots. Figure A3 in Appendix C plots the residualized study effects in each meta-regression against their respective standard errors. The symmetric spread of the residuals around the origin indicates a reassuring lack of overt publication bias (Lin and Chu, 2018; Doleman et al., 2020).

4 Results

In this section, we present results for egocentric economic, sociotropic economic, cultural and humanitarian concerns. Next, we explore whether these concerns differ by migration reason, and developing versus developed context.

4.1 The Drivers for Attitudes Towards Migrants

4.1.1 Egocentric Economic Concerns

If egocentric economic concerns drive attitudes towards migrants, individuals disfavor migrants that have similar skills as themselves and may compete with them in the labor market. To explore this argument empirically, we did not only record migrant characteristics but also key respondent characteristics. Here, we explore attitudes based on the match between migrant and host characteristics across two dimensions: Figure 2 shows whether respondents (dis)favor migrants with a similar level of education, while Figure 3 analyses whether skill and income matches affect preferences for migrants. In both figures, and in all subsequent result figures, we present estimates for each individual study that manipulates that migrant attribute under study; and at the bottom of the figure we present estimates from a random-effects and a fixed-effect meta-analysis. All estimates are expressed in standard deviations

(SD) from the respondents' average attitude level. Horizontal bars are 95% confidence intervals.

The meta-estimates at the bottom of Figures 2 and 3 indicate that there is no strong evidence that egocentric economic concerns are driving attitudes towards migrants.[11] Contrary to theoretical expectations, Figure 2 shows that people tend to favor migrants with a similar educational background, although this effect is small – attitudes towards a migrant with a similar education background score about 0.02 SD higher than the average respondent's attitude (see Appendix B.1 Table A4) – and possibly driven by outlier studies. The meta-estimates in Figure 3 show that respondents prefer migrants with a different skill-set or income level than themselves.[12] While this is in line with expectations around job market competition, this effect – around 0.01 SD – is substantially very small.

The lack of evidence for egocentric economic concerns is reinforced by the variation in estimates across the individual studies.[13] In Figure 2, many studies find no difference between education matches and mismatches of respondents and migrants, some find positive effects of a match, some negative effects. In Figure 3, effect estimates across the individual studies are inconsistent: data from a national survey in China suggests that migrants with the same skills are preferred (Singer and Quek, 2022); data from Japan suggests that skills mismatches are preferred (Igarashi, Miwa and Ono, 2022) and US data suggest no clear preferences (Hainmueller and Hiscox, 2010). This large variation across the studies aggregated into the meta-estimates leaves little confidence in egocentric economic concerns as a main driver of attitudes towards migrants. Indeed, a simple analysis shows that people generally prefer

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[11]Both the fixed-effect and the random-effects model give very similar result estimates. Appendix B presents full results in tabular format.

[12]Some studies vary the income of migrants while others vary the skill level or experience. In this plot, we combine both to achieve more common support, assuming that income and levels of skill are both signals to respondents that the migrant is more highly skilled.

[13]The Q_E heterogeneity test for between-study variation yields large and statistically significant results ($p < 0.001$ in the FE and RE models). The estimated study-level heterogeneity ($\hat{\tau}^2 = 0.02\%$) in the random-effects model amounts to over forty percent of the mean sampling variance of individual effect estimates. Both findings suggest substantial heterogeneity in effect sizes and precision across studies that is left unexplained by the attribute alone.

Figure 2: Egocentric Concerns: Respondents and Migrants Education Level

Education match   Education mismatch
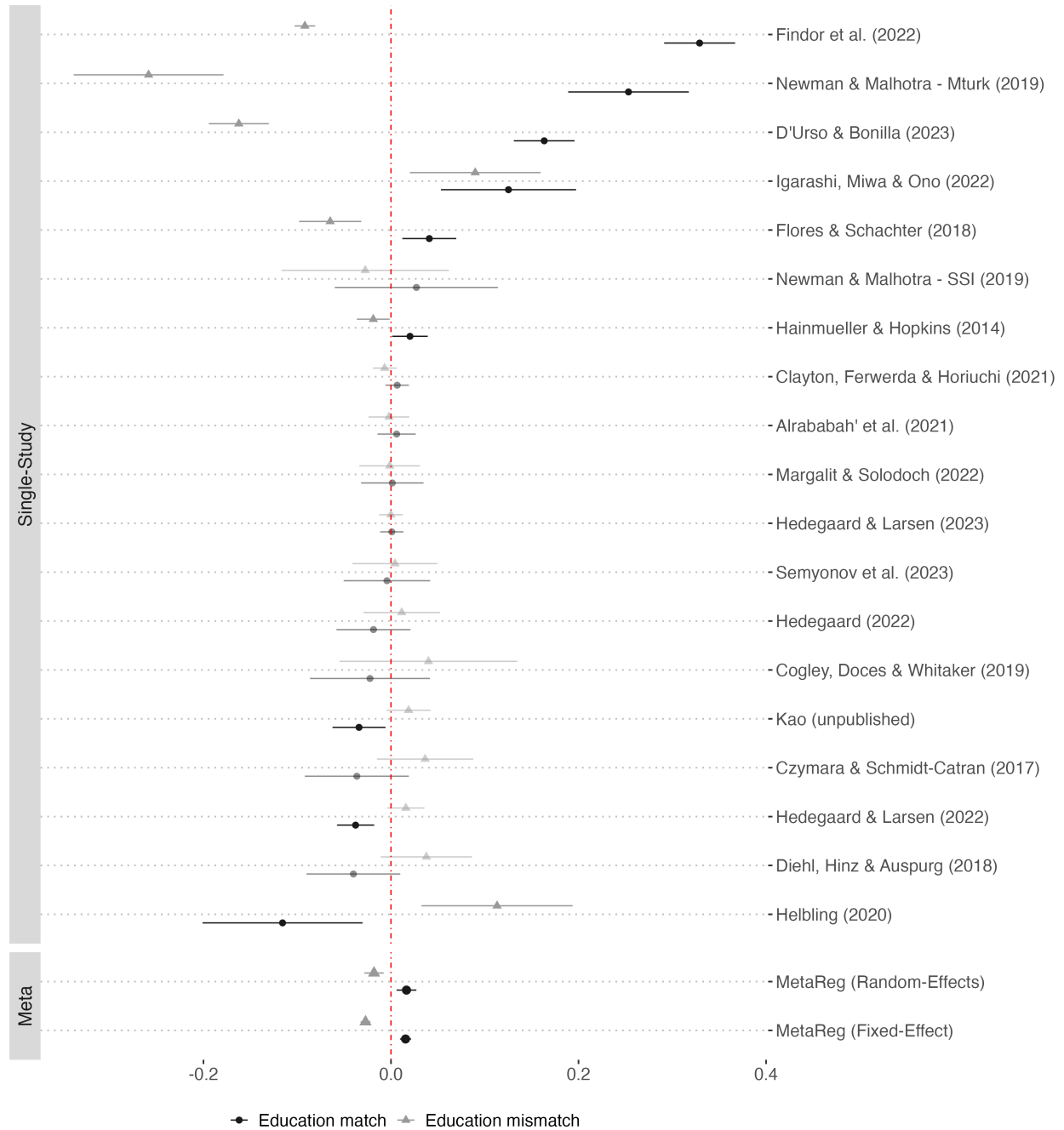
Notes: The effect of a match in migrant's and respondent's education level on positive attitudes towards migrants. High education is defined as having attended or completed higher education. Individual study estimates and meta-estimates from random-effects and fixed-effect meta-regressions. All effects are expressed in standardized units. Meta analyses based on 19 studies.

highly skilled, educated and paid migrants – regardless of their own education and skills.[14]

The null findings for labor market competition or egocentric economic concerns prompted a turn to sociotropic economic concerns in more recent studies (Hainmueller and Hiscox, 2010; Helbling and Kriesi, 2014; Hainmueller and Hopkins, 2014, 2015) – an explanation for attitudes towards migrants that we turn to in the next section.

4.1.2 Sociotropic Economic Concerns

Sociotropic economic concerns suggest that host populations prefer migrants that do not burden their country's welfare system and benefit the overall economy. To explore this claim empirically, we look at differences in attitudes towards migrants across two dimensions: Figure 4 analyzes whether migrants with certain occupations are preferred, and Figure 5 evaluates the importance of migrants' language abilities.

The meta-effects in these figures indicate that host populations prefer migrants with a professional occupation and those that speak the country's language over individuals that are workers, farmers or unemployed and are unable to speak the language. Figure 4 shows that attitudes towards a migrant from a professional occupation are about 0.09 SD higher on the standardized scale than the average attitude (see Appendix B.2 Table A6). Attitudes towards workers and farmers are much lower, with an average estimate at around 0.05-0.06 SD below the mean. Those unemployed are even less favored; scoring 0.15-0.16 SD lower. Moving towards a migrant's language skills, Figure 5 shows that migrants who speak the country's language fluently score 0.10 SD above the average respondent.

Across both figures, most studies consistently find sociotropic economic preferences for professional occupations and migrants that speak the local language. For example, Jeannet (2018) conduct a survey experiment with individuals that are retired or close to retirement age in 14 European countries. Jeannet (2018) demonstrates that host populations retain their sociotropic orientation towards migration even after retirement. Only few studies reveal

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[14]See for example Figure A5 in the appendix.

Figure 3: Egocentric Concerns: Respondents and Migrants Skills Level

Single-Study

Singer & Quek (2022)
Hainmueller & Hiscox (2010)
Shockley & Gengler (2024)
Hainmueller & Hopkins (2014)
Kage, Rosenbluth, Tanaka (2022)
Clayton, Ferwerda & Horiuchi (2021)
Newman & Malhotra - SSI (2019)
Igarashi, Miwa & Ono (2022)
Spilker et al. (2020)
Gaikwad & Nellis (2017)
Newman & Malhotra - Mturk (2019)

Meta

MetaReg (Random-Effects)
MetaReg (Fixed-Effect)

-0.2   -0.1   0.0   0.1   0.2

● Skills/income match   ▲ Skills/income mismatch
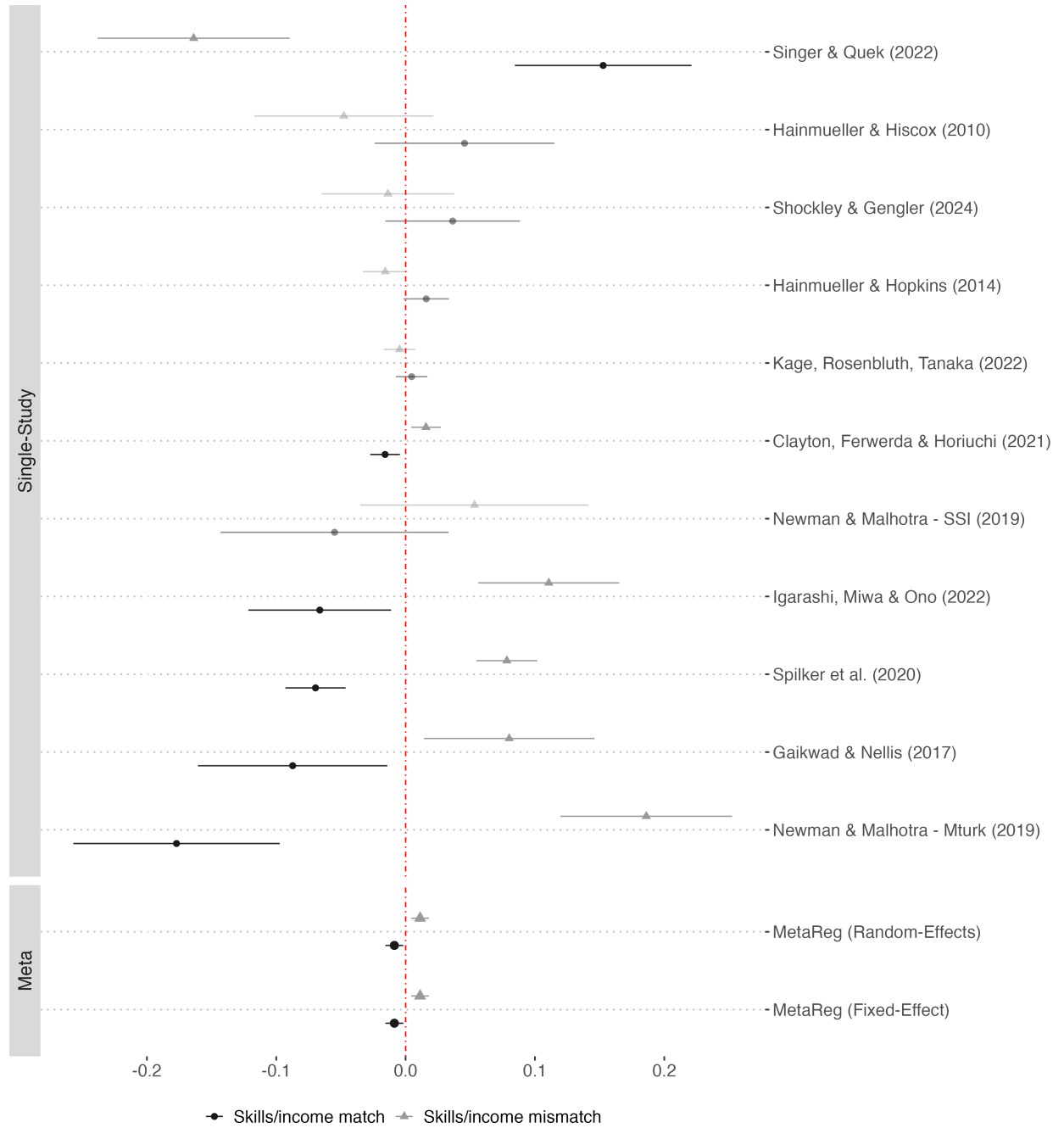
Notes: The effect of a match in migrant's and respondent's income or skills levels on positive attitudes towards migrants. High skills refer to more than three years of training or experience. High income refers to the highest income categories in a given context. Individual study estimates and meta-estimates from random-effects and fixed-effect meta-regressions. All effects are expressed in standardized units. Meta analyses based on 11 studies.

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Figure 4: Sociotropic Concerns: Migrant Occupation
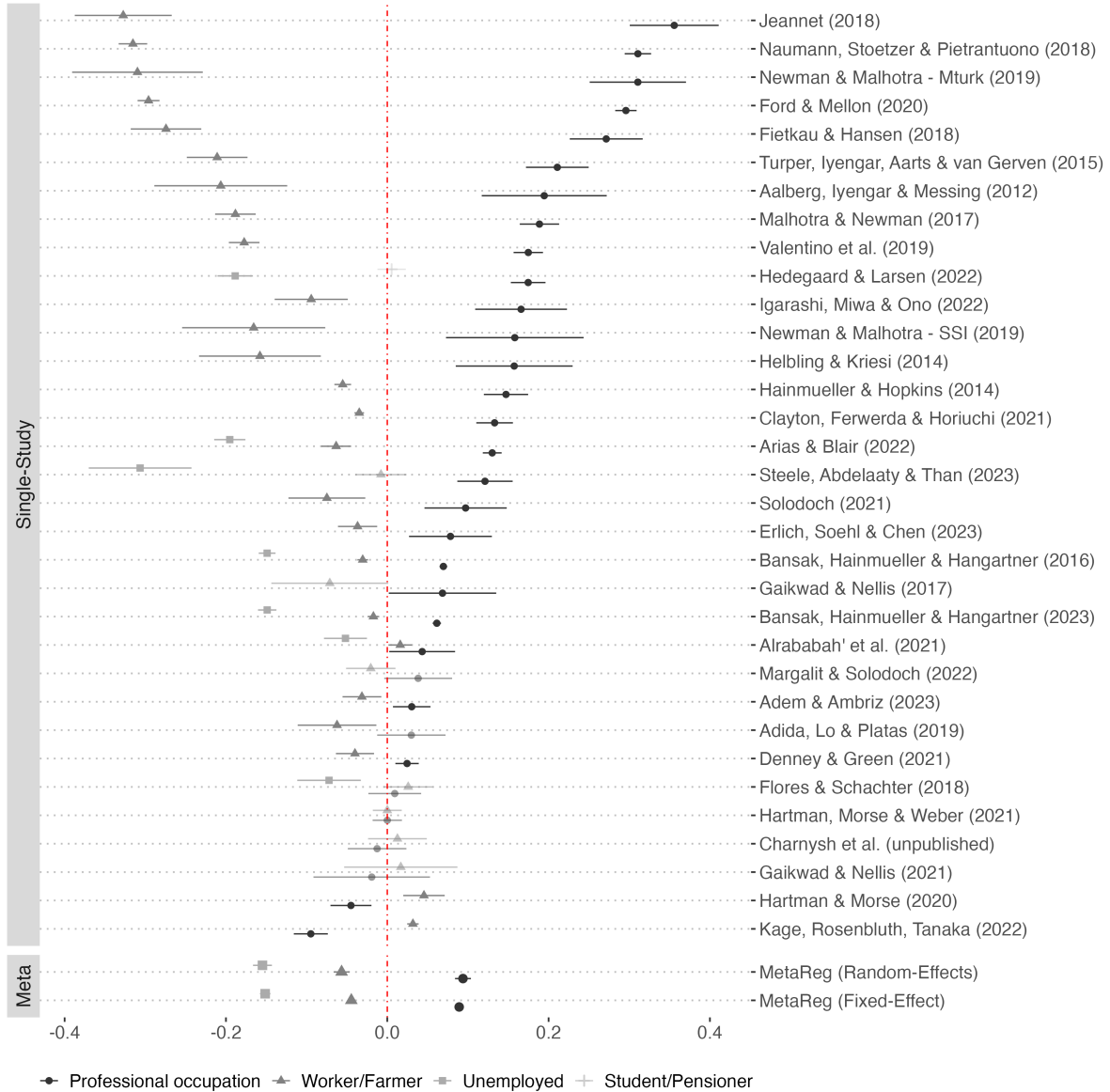
Notes: The effect of migrant's occupation on positive attitudes towards migrants. Examples of professional occupations are scientists, doctors, teachers, programmers or accountants. Individual study estimates and meta-estimates from random-effects and fixed-effect meta-regressions. All effects are expressed in standardized units. Meta analyses based on 33 studies.

much weaker, insignificant or opposite preferences (e.g., Margalit and Solodoch, 2022; Shaffer et al., 2020). With regards to migrants' language ability, Denney and Green (2021) find a strong preference for migrants that speak the local language in South Korea, where they conclude that "broad sociotropic concerns largely drive attitudes towards immigrants" in comparison to other potential drivers.

While sociotropic concerns emerge as important drivers of attitudes towards migrants, the evidence for this finding is less convincing in studies from low-income and developing contexts. In both plots, individual study estimates are substantively smaller or not statistically significant in these contexts. For instance, the effect estimates for Erlich, Soehl and Chen (2023) in Ghana, Gaikwad and Nellis (2017) and Gaikwad and Nellis (2021) in India, Alrababa'h et al. (2021) in Jordan, Hartman and Morse (2020) in Liberia, and Hartman, Morse and Weber (2021) in Syria are all ranked in the bottom half of Figure 4, suggesting small, potentially insignificant or even contradictory effects of migrant's occupation on positive attitudes. The relative order of effect estimates looks similar for language skills in Figure 5: the two insignificant effect estimates from Cogley, Doces and Whitaker (2019) and Shockley and Gengler (2024) stem from Côte d'Ivoire and Qatar, respectively. We return to differences in developed and developing contexts below (section 4.3).

Overall, there is systematic evidence that sociotropic concerns matter. Further evidence and systematic comparison is needed to fully flash out in which contexts sociotropic concerns are particularly dominant or only one explanation amongst many. We offer some suggestions for future research in the discussion section.

4.1.3 Cultural Concerns

Another prominent, non-economic concern is the idea that host populations fear migration from individuals, countries and regions that are culturally distinct from themselves. We analyse this concern focusing on the role of geography and religion. Figure 6 assesses whether migrants from the Global South are disfavored, Figure 7 explores whether hosts pre-

Figure 5: Sociotropic Concerns: Migrant Language Skills

Single-Study

- Denney & Green (2021)
- Clayton, Ferwerda & Horiuchi (2021)
- Turper, Iyengar, Aarts & van Gerven (2015)
- Brooks, Manza & Cohen - Fitting-in (2016)
- Hainmueller & Hopkins (2014)
- Hedegaard & Larsen (2022)
- Arias & Blair (2022)
- Czymara & Schmidt-Catran (2017)
- Bansak, Hainmueller & Hangartner (2016)
- Adida, Lo & Platas (2019)
- Bansak, Hainmueller & Hangartner (2023)
- Kao (unpublished)
- Margalit & Solodoch (2022)
- Adem & Ambriz (2023)
- Stoop, Van der Windt & Weber (unpublished)
- Diehl, Hinz & Auspurg (2018)
- D'Urso & Bonilla (2023)
- Hedegaard (2022)
- Shaffer et al. (2020)
- Flores & Schachter (2018)
- Hedegaard & Larsen (2023)
- Cogley, Doces & Whitaker (2019)
- Shockley & Gengler (2024)

Meta

- MetaReg (Random-Effects)
- MetaReg (Fixed-Effect)

-0.3   -0.2   -0.1   0.0   0.1   0.2   0.3

• Fluent language   ▲ Broken language   ■ Unable to speak language

Notes: Effect of migrant's language skills on positive attitudes towards migrants. The language skill levels of migrants refer to English or the local language in a given context. Individual study estimates and meta-estimates from random-effects and fixed-effect meta-regressions. All effects are expressed in standardized units. Meta analyses based on 23 studies.

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fer migrants from the same world region, and Figure 8 explores whether migrants' religion matters.

The three figures generally suggest that culture plays a complex role in shaping attitudes towards migrants. Figure 6 shows that there is a weak preference for migrants from the Global North as opposed to the Global South; the meta-analysis estimates, while statistically significant, are substantively small (see Table A9 in Appendix B.3). Figure 7 shows that there is a preference for migrants from the same world region compared to a different world region.[15] But also these estimates are small; attitudes towards a migrant from the same region are about 0.01 SD higher than the average attitude (Table A10 in Appendix B.3). Finally, we find a strong and systematic preference for Christian as opposed to Muslim migrants in Figure 8; Christian migrants score 0.07-0.08 SDs higher than the average and with roughly the same range symmetrically below the mean for Muslim migrants (see Appendix B.3 Table A11). These three analyses suggest that religion, more so than geography, shapes which migrants are welcomed or rejected.

The small estimated meta-effects when it comes to geography can be attributed to variation across individual studies. Figures 6 and 7 show that while multiple studies suggest that respondents prefer Global North migrants or migrants from the same world region (e.g. Turper et al., 2015; Malhotra and Newman, 2017), other studies obtain imprecisely estimated effects (Hartman, Newman and Scott Bell, 2014; Ravn and Bredgaard, 2021; Tremblay-Boire, Prakash and Calderon, 2023) or contradictory findings (e.g. Kage, Rosenbluth and Tanaka, 2022; Solodoch, 2021). One explanation for the finding that cultural concerns are less clear at the systematic meta-level than economic concerns is that study contexts have diverse histories shaping who is perceived as the cultural outgroup. For example, the strongest preference for migrants from the Global North as opposed to the Global South is found by Brooks, Manza and Cohen (2016). In this experiment among US respondents, the Global North is represented by Canadian migrants, while migrants from Mexico and Pakistan repre-

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[15]We use the World Bank regional classification: East Asia and Pacific, Europe and Central Asia, Latin America and Caribbean, Middle East and North Africa, North America, South Asia, Sub-Saharan Africa.

Figure 6: Cultural Concerns: Migrant Origin is Global North or South
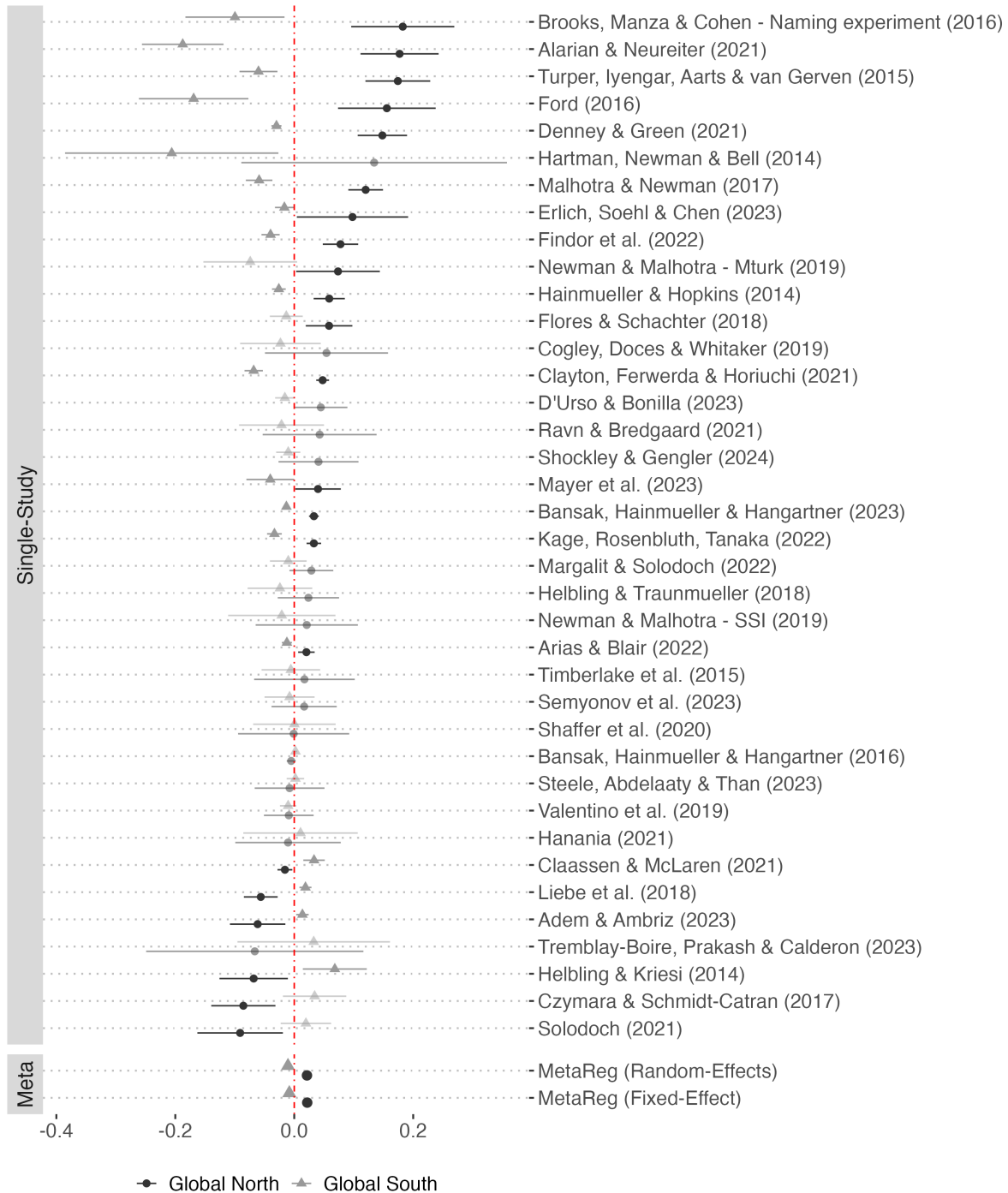
Notes: The effect of migrant's world region of origin on positive attitudes towards migrants. Global South countries are all countries not located in North America or Europe. Individual study estimates and meta-estimates from random-effects and fixed-effect meta-regressions. All effects are expressed in standardized units. Meta analyses based on 38 studies.

sent the Global South. For anyone familiar with debates around migration in the US, it is no surprise that a choice between Canadian and Mexican migrants is quite stark.[16] In contrast, Solodoch (2021) finds that Global North countries are disfavored in the Netherlands. This study, however, compares Turkey - a Global North country - with Suriname and Indonesia; two Global South countries that share an explicit colonial history with the Netherlands. Considering colonial legacies, it may not be surprising that a Dutch study population in 2021 disfavors Turkish migrants over migrants from Suriname and Indonesia. The conclusion is that geography matters - as certain origin countries and regions are disliked by hosts - but that cultural histories between countries shape who is an outsider or insider.

Religion also plays an important role in shaping which migrants are rejected or welcomed, with substantial effect sizes. The strongest results, as illustrated in Figure 8, can be found in Semyonov et al. (2023), where respondents in Israel favor Jewish over Muslim migrants, and in Rich, Bison and Kozovic (2021), where respondents in South Korea are open to agnostic North Korean arrivals but not to Muslim refugees from Yemen. The findings in Figure 8 can be interpreted as a persistent and consistent anti-Muslim bias across the majority of study contexts (e.g. Adida, Lo and Platas, 2019). In Figure A6 in Appendix D.2, we find that not only Christian-majority countries disfavor Muslim migrants but also countries with mixed religions, secular majorities or other dominant religions; and Muslim-majority countries do not hold very strong pro-Muslim attitudes. Although there is not enough systematic evidence from non-Christian countries to be conclusive, the evidence suggests a relatively wide-spread anti-Muslim bias.

Overall, cultural concerns – and religion in particular – affect attitudes towards migrants but are sensitive to the study context.[17] The histories and cultural evolution of various

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[16]In fact, all studies with Canada as one origin country in the design (Adem and Ambriz, 2023; Brooks, Manza and Cohen, 2016; Flores and Schachter, 2018; Malhotra and Newman, 2017; Newman and Malhotra, 2019; Turper et al., 2015) find comparatively big preferences for the Global North.

[17]The effect heterogeneity between individual study reports also varies considerably between the meta-analyses discussed in this section: the corresponding parameter estimate ($\hat{\tau}^2$) ranges from a low 4.4% for North/South contrast, to a medium 11% for host-migrant origin matches, up to a high 70.3% for migrant religion, compared to the average level of sampling variance within each study in each attribute's case. See Tables A9, A10, and A11 in Appendix B.3 for the model results for each meta-analysis.

Figure 7: Cultural Concerns: Migrant and Respondent Region

Brooks, Manza & Cohen - Naming experiment (2016)
Alarian & Neureiter (2021)
Ford (2016)
Malhotra & Newman (2017)
Findor et al. (2022)
Newman & Malhotra - Mturk (2019)
Flores & Schachter (2018)
Clayton, Ferwerda & Horiuchi (2021)
Ravn & Bredgaard (2021)
Mayer et al. (2023)
Bansak, Hainmueller & Hangartner (2023)
Arias & Blair (2022)
Denney & Green (2021)
Shockley & Gengler (2024)
Bansak, Hainmueller & Hangartner (2016)
Valentino et al. (2019)
Claassen & McLaren (2021)
Erlich, Soehl & Chen (2023)
Cogley, Doces & Whitaker (2019)
Liebe et al. (2018)
Adem & Ambriz (2023)
Tremblay-Boire, Prakash & Calderon (2023)
Helbling & Kriesi (2014)
Czymara & Schmidt-Catran (2017)
Solodoch (2021)
Kage, Rosenbluth, Tanaka (2022)

MetaReg (Random-Effects)
MetaReg (Fixed-Effect)

Single-Study

Meta

-0.2   -0.1   0.0   0.1   0.2

● Same world region   ▲ Different world region

Notes: The effect of the (mis)match of migrant's and respondent's world region on positive attitudes towards migrants. Individual study estimates and meta-estimates from random-effects and fixed-effect meta-regressions. All effects are expressed in standardized units. Meta analyses based on 26 studies.

Figure 8: Cultural Concerns: Migrant Religion
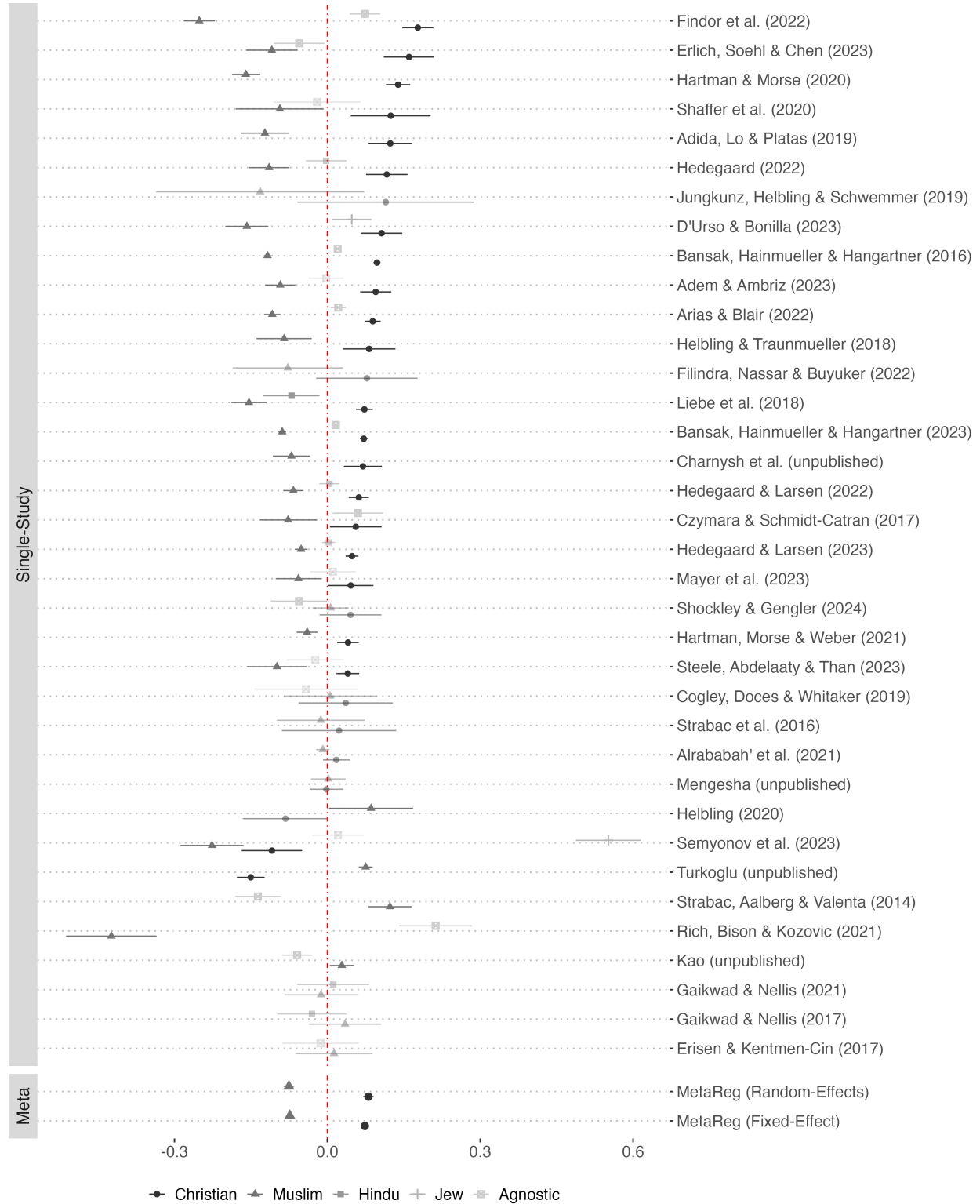
Notes: The effect of migrant's religion on positive attitudes towards migrants. Individual study estimates study and meta-estimates from random-effects and fixed-effect meta-regressions. All effects are expressed in standardized units. Meta analyses based on 36 studies.

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study contexts shape who is perceived as the cultural outgroup, how politicized that group is and where the main cultural identity lies. Hence, more work is needed to disentangle what exactly makes a migrant culturally distinct or similar from the host population.[18]

4.1.4 Humanitarian Concerns

The final set of factors put forward in the literature relates to humanitarian concerns, with the expectation that people are more open to hosting migrants in need. Multiple studies have explored if migrants suffering from post-traumatic stress disorder, physical sickness or disability, or migrants that explicitly rely on charity or face food insecurity are preferred over less vulnerable profiles. To cover a wide range of studies in our meta-analysis, we focus on two attributes that are often manipulated to vary levels of vulnerability: migrants' gender (Figure 9) and the reason for migration (Figure 10).

In sum, we find clear evidence that humanitarian concerns shape attitudes towards migrants. Figure 9 shows consistent evidence that female migrants are preferred over male migrants.[19] The average attitudinal gap is precisely estimated at around 10% on the standardized opinion scale in favor of female over male migrants (see Table A12 in Appendix B.4). Additionally, we find that forced migrants - refugees, IDPs, asylum-seekers - are generally favored over economic migrants (Figure 10). On average, host attitudes are 0.06-0.11 SD higher towards forced migrants and 0.11 SD lower for towards economic migrants, respectively, relative to the mean attitude on the standardized scale ($p < 0.001$; see Appendix B.4 Table A13).[20]

The preference for female migrants is found in almost all individual studies. In contrast,

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[18]Here it is worthwhile noting that people in nearly all studied contexts prefer migrants who are able to speak their language (see Figure 5). While most studies interpret this as evidence for sociotropic economic concerns, with language skills increasing a migrant's perceived potential contribution to the economy, one could also argue that it is indicative of a preference for migrants who are culturally more similar.

[19]We explore whether female and male respondents have different preferences but find no gendered preferences for types of migrants.

[20]The analogous meta-estimates for a migrant seeking family reunion is about 0.05-0.06 SD above the mean and about 0.01-0.03 SD below the mean for climate migrants, although these two types of migrants feature in markedly fewer studies to support reliable inference.

Figure 9: Humanitarian Concerns: Migrant Gender
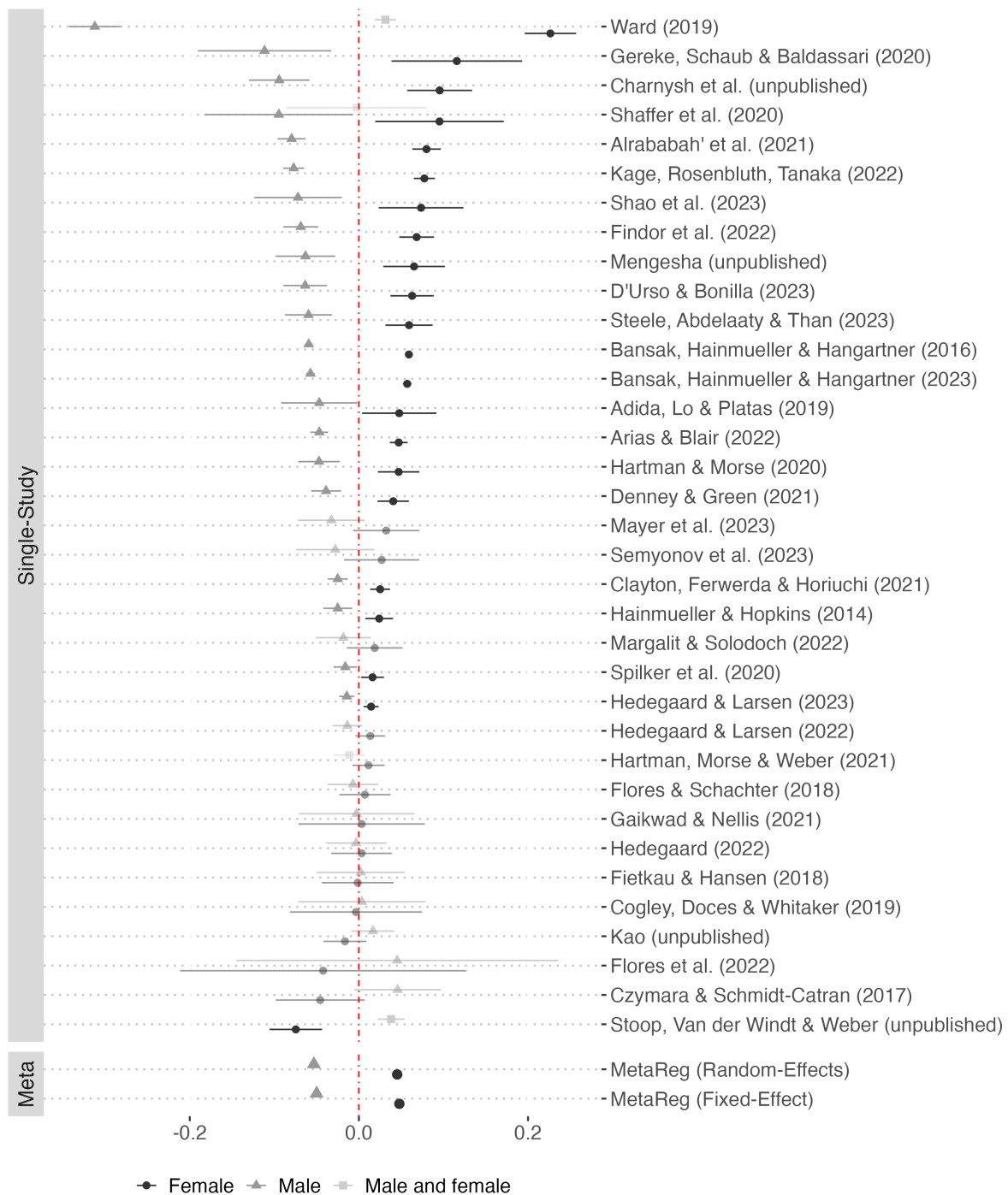
Notes: The effect of migrant's gender on positive attitudes towards migrants. Individual study estimates and meta-estimates from random-effects and fixed-effect meta-regressions. All effects are expressed in standardized units. Meta analyses based on 34 studies.

the preference for forced migrants over economic migrants is less consistent across studies. The heterogeneity in effect sizes is quite high, estimated to be about 1.5 times that of the average effect variance within a study (see Table A13). Nevertheless, there are only two cases in which respondents discriminated against forced migrants in comparison to other migrants with precisely estimated negative effects. To highlight one example, Spilker et al. (2020) conducted a conjoint experiment focused on rural-to-urban migration in Kenya and Vietnam and find that persecuted internal migrants are least preferred compared to environmentally affected migrants and economic migrants. The authors explain this unusual finding by highlighting that persecution might not be perceived as a realistic movement motive by respondents in Vietnam and Kenya. Despite this effect heterogeneity, the overwhelming evidence is hence that vulnerable migrants - women and those forcibly displaced - are indeed preferred over other migrants.

In sum, we find that humanitarian concerns co-exist as a separate driver of positive attitudes towards migrants. While sociotropic economic concerns suggest that host populations prefer capable migrants that make economic contributions, humanitarian concerns suggest that hosts are nevertheless open to welcoming the vulnerable. One should note, however, that there is huge variation in study designs to explore humanitarian concerns. This meta-analysis has focused on gender and the reason to migrate but other studies have manipulated whether migrants have physical or mental disabilities or require food and assistance. The current literature misses a unified conceptual framework that identifies reliable markers for migrant vulnerability across contexts. In the next section, we explore in more detail how humanitarian and sociotropic concerns interact in a systematic comparison of attitudes towards forced and economic migrants.

4.2 Economic versus Forced Migrants

Do the same factors drive public attitudes towards economic and forced migrants? To study this question, we split the study population into cases where respondents were presented

Figure 10: Humanitarian Concerns: Migrant Reason for Migration
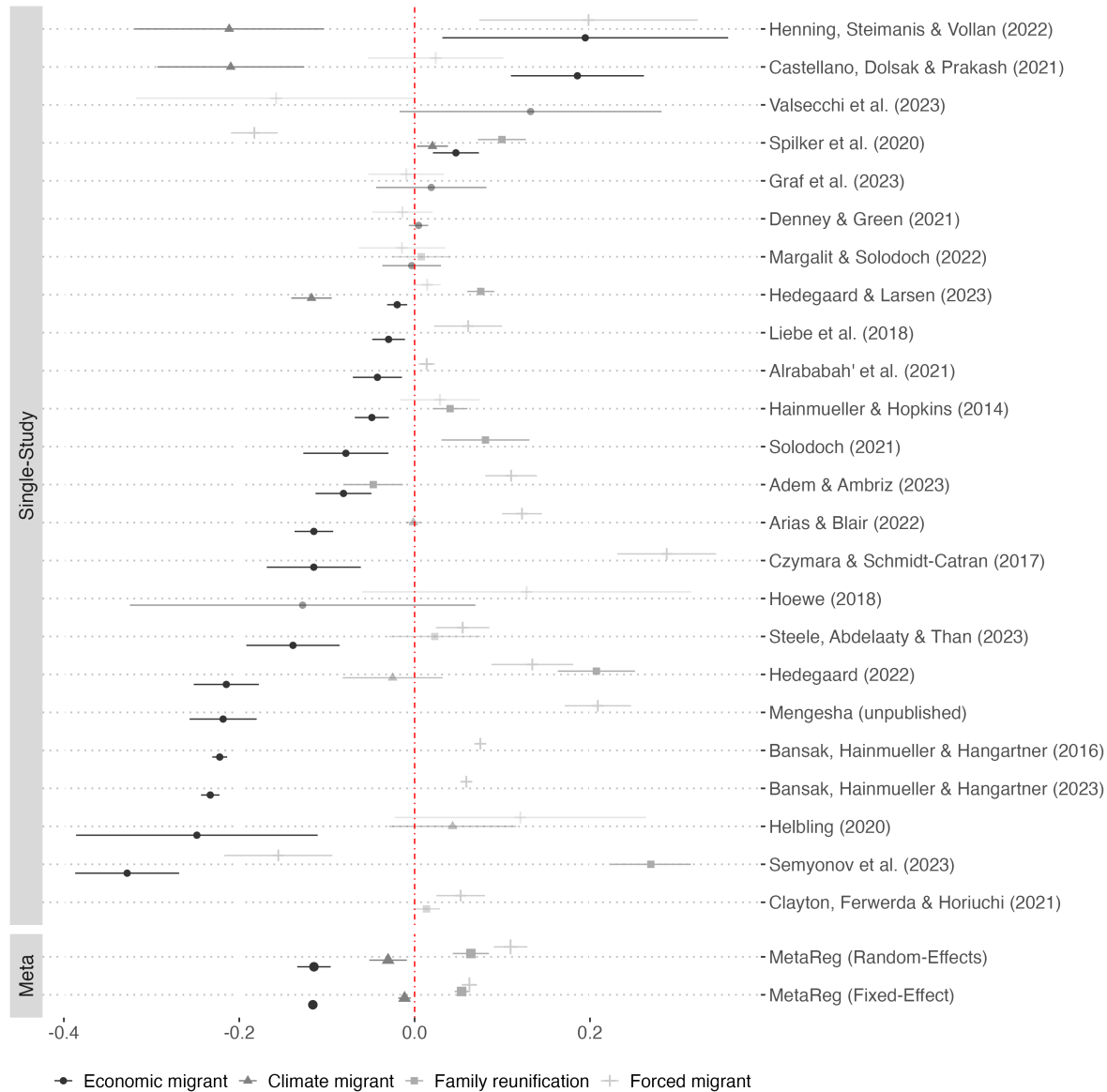
Notes: The effect of migrant's reason to migrate on positive attitudes towards migrants. Individual study estimates and meta-estimates from random-effects and fixed-effect meta-regressions. All effects are expressed in standardized units. Meta analyses based on 23 studies.

with profiles of either economic or forced migrants and re-estimate the individual study and meta-effects.[21] We want to explore if – conditional on the framed reason why a person moves – different characteristics influence public attitudes towards migrants. We suggest that sociotropic concerns matter more strongly when host populations evaluate economic migrants.

Figure 11 show results, where we present only the meta-estimates from the random-effects models for economic migrants (dark grey dots) and forced migrants (light grey dots).[22] We present results only for those attributes that are manipulated in at least five studies; e.g., we therefore have no estimates for egocentric concerns.

Figure 11 shows that certain attributes consistently matter across both groups of people on the move. For instance, we note a systematic preference for female migrants, Christian migrants and those fluent in the local language, while Muslim migrants, those unable to speak the local language and unemployed migrants are systematically disfavored.

Attributes related to sociotropic concerns, however, matter more strongly for economic than for forced migrants. When evaluating economic migrants, the public exhibits clear preferences for individuals that are highly educated and have a professional occupation compared to workers or farmers and those with no or only primary education. This pattern is less obvious when respondents are evaluating the profile of a forced migrant. Here, it matters less whether a refugee or IDP is educated or what type of occupation they have, with the point estimates being considerably smaller. Although we should note that the number of studies evaluating forced migrants is often lower, these findings suggest that humanitarian concerns may indeed weaken the sociotropic tendency of host populations to favor migrants

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[21]In this assessment, we drop cases in which migrants move due to climate reasons or family reunification. The estimates for "forced migrants" include cases in which either the whole study population was primed to think about refugees or IDPs or in which the specific attribute manipulating the reason to move presented a forced migrant. Equivalently, the estimates for "economic migrants" stem from studies in which all respondents were primed to think about labor migrants or the specific attribute manipulating the reason to move presented an economic migrant.

[22]The fixed-effect estimates are substantively similar to the random-effects estimates but omitted to simplify visualisation. Full model results for both sets of model estimates are reported in Appendix Section B.5, Table A14.

that contribute to the economy. This adds to findings that host populations' views are considerably shaped by a framing of migrants as economic and forced migrants (e.g., Hamlin, 2021).

Figure 11: Economic versus Forced Migrants
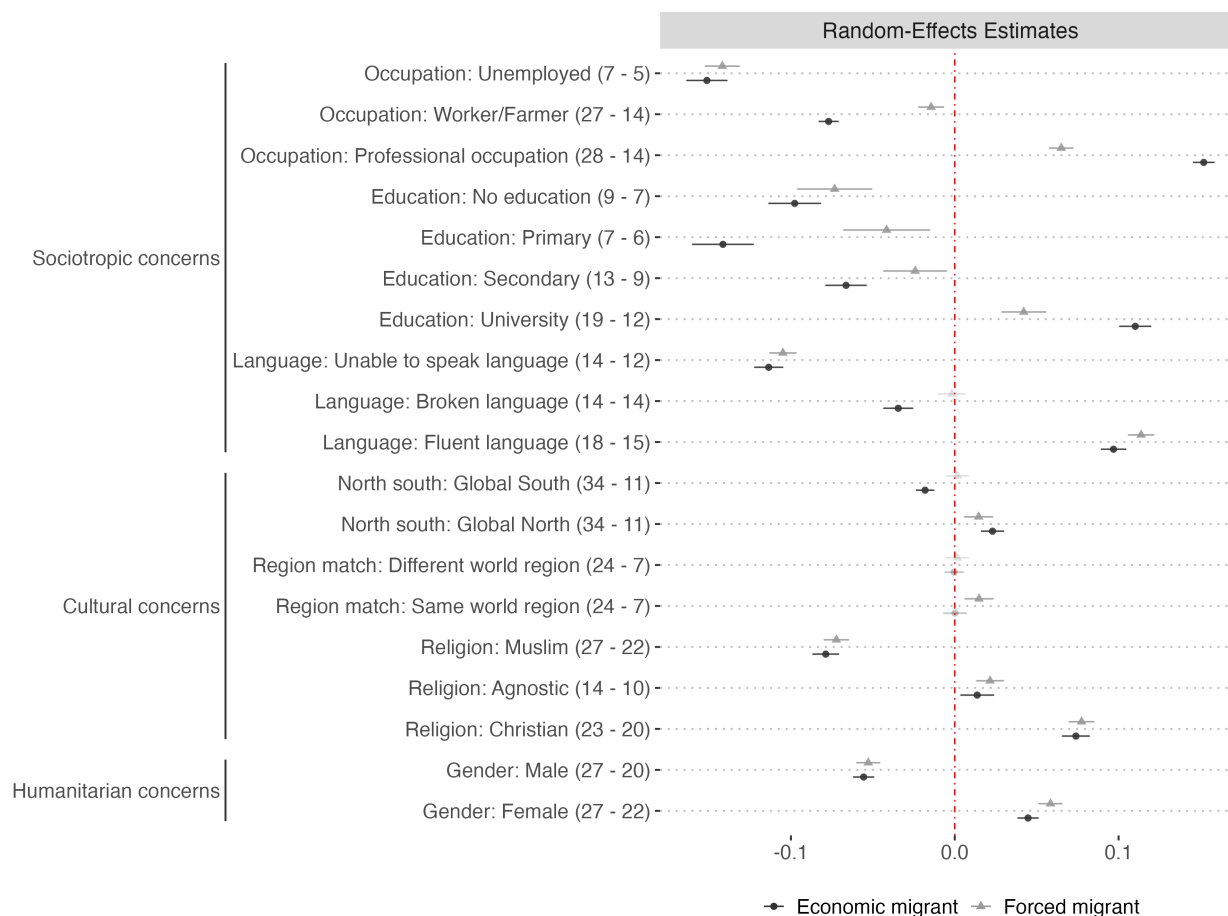
Notes: Comparison between random-effects meta-estimates for cases in which an economic migrant is presented to the respondents vs for cases in which a forced migrant is presented. Only attributes used in at least five studies for forced and economic migrants are included in each meta-analysis. The number of studies per attribute level are indicated in parentheses "(X - Y)", where X (Y) indicates the number of studies for economic (forced) migrants for that attribute level. See Appendix Table A14 for full results from fixed-effect and random-effects models.

4.3 Knowledge Gaps in Developing and Developed Contexts

Do hosts in developing countries perceive migrants similarly as hosts in developed countries? To date scholarly attention has focused on migrant attitudes in developed contexts, most notably in Europe and the United States. Indeed, only 14/83 studies in our meta-analysis have surveyed populations in developing countries. This stylized fact is well-illustrated in Figure 12, which plots the total number of respondents from each country included in this meta-analysis – an indication of scholarly interest – to the number of forcibly displaced persons received by those countries between 2010 and 2020. The figure shows that Colombia, Syria, the Democratic Republic of the Congo and Sudan host around 19 million forcibly displaced people in total; about a third of the global migrant population. Yet, these countries account for less than 2% of study respondents.

A similar disconnect between scholarly interest and empirical reality, albeit less strong, exists for labor migration. The well-represented populations of Europe and the US in our meta-analysis are indeed large destinations for international migrants.[23] However, Saudi Arabia, Russia, Thailand, Malaysia, and Pakistan are all top 20 migration destinations on the global scale (IOM, 2022) but are not included in this meta-analysis.

With few studies from the developing world, answering the question whether similar drivers are at play in developed and developing contexts is challenging. Nevertheless, we attempt to do so in Figure 13, which shows random-effects meta-estimates. We require common support across studies and thus focus solely on attributes that appear in at least five studies, and are therefore limited to explore three attributes: migrant's gender, religion, and occupation.

We find that hosts in developed countries are more welcoming towards female migrants, Christians, and those with professional occupations compared to male migrants, Muslims and workers or farmers. While we find similar differences in terms of gender and religion

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[23]Europe hosts about 30.9% of the global migrant population and North America has the second largest share of international migrants amongst their population.

Figure 12: Study Coverage and Forced Displacement
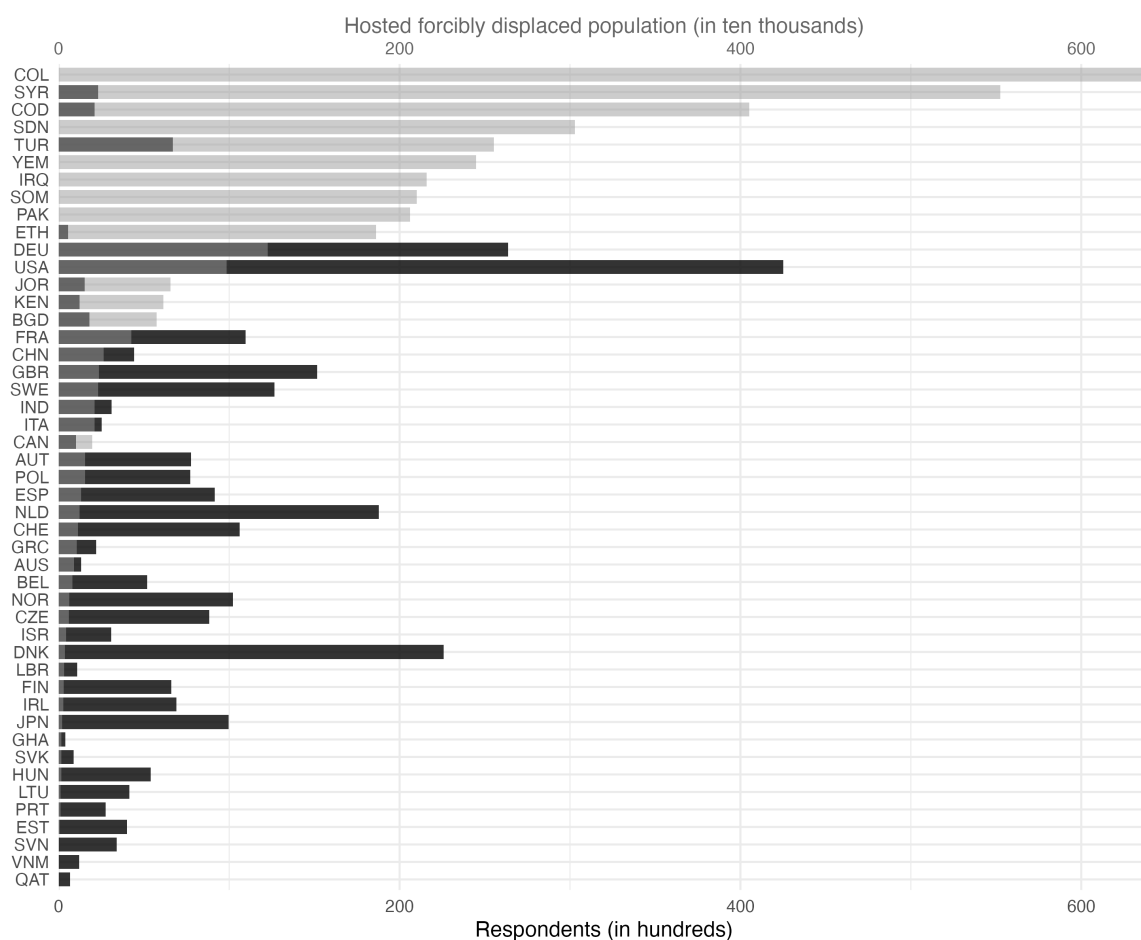
Notes: Grey bars display annual average forcibly displaced populations hosted per country between 2010 and 2020. Black bars show the number of respondents across the meta-analysis. Figure includes only countries that are in the meta analysis or host over 2 million forcibly displaced. Data from UNHCR (2010-2023). Authors' own analysis.

in developing countries, we do not observe a preference for professional occupations – such as doctors, teachers and scientist – compared to workers or farmers. This suggests that sociotropic economic concerns might play a reduced role in developing contexts. The confidence intervals around the effect estimates are wider and the effect sizes are generally smaller or close to zero on a standardized scale. This intriguing finding highlights the need for more scholarly attention on what drives attitudes towards migrants in developing countries.

Figure 13: Comparison Developed and Developing Countries
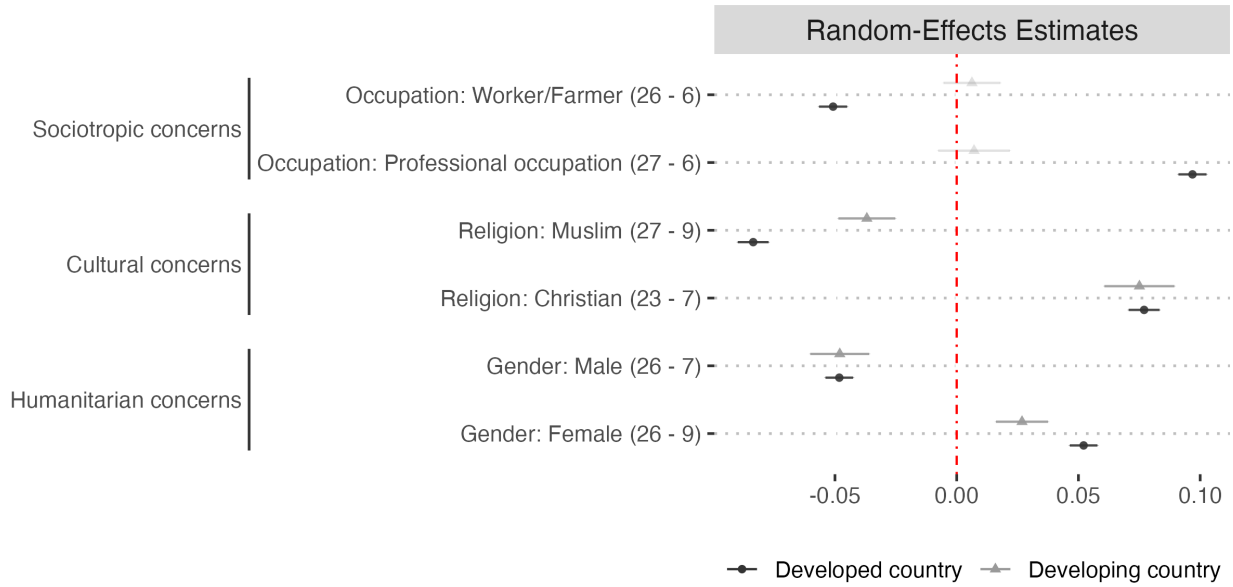
Notes: Estimates are only shown if at least five studies in both context types were present. The number of studies per attribute level are indicated in parentheses "(X - Y)", where X (Y) indicates the number of studies in developed (developing) countries for that attribute level. See Appendix Table A15 for full model results using both fixed and random specifications.

5   Discussion and Conclusion

In response to large and increasing (forced) migration flows, a growing body of literature aims to understand people's attitudes towards migrants. After nearly two decades of research it is time to synthesize the existing evidence and highlight knowledge gaps. This meta-analysis empirically investigates the role of the four major theoretical drivers of mi-

grant attitudes that have been proposed by the literature: egocentric economic concerns, sociotropic economic concerns, cultural concerns and humanitarian concerns. We build on data from 83 studies in 43 countries that experimentally vary migrant characteristics. The aggregated data further allow us to contribute by investigating whether there are universal concerns about migration, or if they differ across country contexts and migrant types. These are questions that individual studies cannot address.

In sum, there is no evidence for egocentric economic concerns; e.g., fears of labor market competition do not drive attitudes towards from migrants. Instead, sociotropic concerns shape attitudes towards migrants, with host populations generally preferring migrants that contribute to the overall economy. These concerns matter in particular for migrants that move in search of economic opportunities but less so for those that are forcibly displaced, or when focusing on host populations in developing countries. In addition, cultural concerns around the geographical origin and religion of migrants lead to context-specific rejections of certain migrant profiles. A widespread anti-Muslim bias seems to shape attitudes towards migrants not only in Christian-dominated countries but almost universally. Finally, humanitarian concerns are important, and particularly shape the reception of forcibly displaced populations. Based on our findings (summarized in Table 3), we suggest six avenues for cumulative research.

Table 3: Summary of meta-analytical results

Driver		Details
Egocentric economic concerns	✗	No convincing support
Sociotropic economic concerns	✓	
Cultural concerns	(✓)	In particular religion, but context-dependency
Humanitarian concerns	✓	Further conceptualisation needed
Forced vs economic migrants	✓	Sociotropic concerns more relevant for an evaluation of economic migrants
Developed vs developing countries	✓	Sociotropic concerns less relevant in developing countries

Notes: The table summarises whether the meta-analyses generally find support for the key drivers of migration attitudes.

First, new studies should focus more on developing countries. Although developing countries are the largest receiver of forcibly displaced migrants, only 14/83 studies in this meta analysis come from the developing world. Although we are limited by a small sample size, our findings suggest important differences between host community attitudes in developed and developing countries, with sociotropic concerns being less important in the latter. In addition, there might be concerns that shape the reception of migrants in developing countries, but that have received limited attention because of the literature's focus on developed countries. Security concerns, for example, may shape how hosts perceive migrants, particularly when host communities have experienced violence, when migrants might be ex-combatants, or when the reception of migrants may signal wartime loyalties. More research is also needed to understand how humanitarian concerns play out in violent and fragile contexts where a large proportion of the hosting population has humanitarian needs themselves.

Second, to date we know little about how attitudes may differ towards different groups of migrant populations. For example, at the end of 2023, 117.3m people were living in forced displacement, about half (68.3m) seek shelter within their countries' borders (UNHCR, 2024). One key comparison would thus be if attitudes differ towards migrants from within the country and abroad. Also, a small but increasing number of studies explore how respondents think about individuals that move due to slow-onset climate change or climate-related disasters. Given the increasing scholarly attention on the wider societal impacts of the climate crisis, we anticipate a considerable rise in studies focused on the perceptions of "climate migrants". While the evidence from this meta-analysis is not sufficiently precise to draw strong conclusions, the tentative results indicate that climate migrants are neither seen as particularly vulnerable compared to refugees but also not as negative as economic migrants.

A third avenue for research relates to sociotropic economic concerns. A key question is whether hosts in countries with higher social welfare provision hold stronger sociotropic concerns towards migrants compared to hosts in countries with less social welfare. Further

comparative research may also want to explore whether shocks in the demand or supply of low- and high-skilled workers reduces, changes or increases sociotropic concerns. This is also important in the context of demographic shifts to older populations in middle- and high-income countries, making migration a potential source of critical labor supply. As of now, research is not able to predict in which contexts sociotropic concerns are the most dominant and how sociotropic concerns interact with welfare and labor demands.

With regards to humanitarian concerns, there is a need to clarify what host populations understand when thinking of a "vulnerable" migrant in need of humanitarian protection. There is currently limited conceptualization of markers of humanitarian concerns, which is illustrated by the wide range of attributes used across studies. This meta-analysis is not able to explore whether experiences of trauma (exposure to violence, psychological damage, or physical injuries) as opposed to sociodemographic markers of vulnerability (women, children, elderly) provoke a more humanitarian response to migrants.

Fifth, cultural concerns are context-dependent. Colonial and cultural legacies that are specific to study regions, populations, and respondents seem to shape which migrants are seen as politicized or not. Critical migration scholars have highlighted the important role of legacies of European colonialism in Africa and the Middle East and US interventions in Mexico and Latin America for the type of migrant that is seen as illegal, criminal and culturally distinct (Hamlin, 2021, 15). To date, however, there is no study that has systematically studied whether hosts are less or more likely to accept migrants from former colonies in quantitative setups. This unexplored cultural context-dependency means that little is known about how multi-language and multi-ethnic societies define religious and cultural outsiders and what role these cultural concerns play in shaping attitudes towards migrants. It remains open for further research to explore what cultural aspects make a migrant distinct from the host community – is it religion, certain values and behaviours, the phenotype?

Finally, the majority of studies assess whether hosts are willing to "admit" a migrant or refugee to the country. However, individuals may respond very different when asked about

a migrant being admitted to the country versus a migrant becoming one's neighbor, or the migrant marrying one's children. There is some evidence that migrants who are already within the country receive a "stock premium" of support compared to newly incoming migrants (Margalit and Solodoch, 2022), but little research has assessed systematically whether attitudes depend on different subject areas and outcomes - ranging from admission, to citizenship or welfare support. It is thus important to explore more systematically whether attitudinal outcomes shape migrant perceptions.

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Appendix for

A Meta-Analysis of Attitudes Towards Migrant and Displaced Persons

A Study Collection Process and Meta-Analysis Sample

A.1 Query for Scopus Data Search

We used the following search approach to identify potentially relevant studies on *Scopus*:

- Substantive focus. Must include at least one keyword from each of the three following categories in both title and abstract:

  - *hosting* OR *accepting* OR *preference* OR *inclusion* OR *sentiment*
  - *refugees* OR *displaced people* OR *internally displaced people* OR *migrants* OR *asylum seekers* OR *forced displaced*
  - *immigration* OR *migration* OR *displacement*

- Methodological focus. Must include at least one keyword in both title and abstract from:

  - *experiment* OR *experimentally* OR *conjoint* OR *vignette* OR *random*

- Practical boundaries: Publication year between 2000 and 2025, subject area is *Social sciences* or *Multidisciplinary*, language must be in English, must be a journal article

The full set of search terms we used in our Scopus search based on the joint criteria just given is quoted below:

(("hosting" OR "attitudes" OR "accepting" OR "preferences" OR "inclusion" OR "sentiment") AND ("refugees" OR "displaced people" OR "internally displaced people" OR "migrants" OR "asylum seekers" OR "forced displaced") AND ("immigration" OR "migration" OR "displacement") AND ("experiment" OR "experimentally") AND PUBYEAR > 1999 AND PUBYEAR < 2025) AND (LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "MULT")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English")))

We undertook a systematic search of four major online registries in social sciences in April 2024. Together, the registries contained 12,248 studies. For each registry, we searched based on keywords. Registries have different search functions and thus the search differed by registry (presented below). We obtained 174 studies. Next, we manually verified the study's applicability and whether it was not already included in our dataset. This resulted in nine relevant studies. Through our own professional networks, we heard of two other unpublished data sources that we also included in the meta-analysis although not identified through the registry search.

EGAP registry (`https://osf.io/registries/egap`):

- Total number of studies registered: 2788

- Keyword searches:

    - "Experiment" "refugees"
    - "Experiment" "migrants"
    - "Experiment" "displaced people"
    - "Experiment" "internally displaced people"
    - "Experiment" "asylum seekers"
    - "Experiment" "forced"

AEA RCT Registry (`https://www.socialscienceregistry.org/`):

- Total number of registered studies: 8,573

- Keyword searches:

    - Experiment refugees
    - Experiment migrants
    - Experiment displaced people
    - Experiment internally displaced people
    - Experiment asylum seekers
    - Experiment forced

Registry of Efficacy and Effectiveness Studies (`https://sreereg.icpsr.umich.edu/sreereg/`):

- Number of registered studies: 626

- Keyword searches (in addition to "Design category = Randomized Trial"):

    - "refugees"
    - "migrants"
    - "displaced people"
    - "asylum seekers"
    - "forced"

Registry for International Development Impact Evaluations (`https://ridie.3ieimpact.org/`):

- Number of registered studies 261

- Keyword searches:

    - "+experiment +refugees"
    - "+experiment +migrants"
    - "+experiment +displaced"
    - "+experiment +asylum"
    - "+experiment +forced"

A.3 List of Included Studies

Table A1: Full list of studies included in the meta-analysis

Authors (year)	Title	Journal	Experiment	Population	N	Study region
Aalberg, Iyengar and Messing (2012)	Who is a 'Deserving' Immigrant? An Experimental Study of Norwegian Attitudes	SPS	Factorial	Migrants	1999	Europe and Central Asia
Adem and Ambriz (2023)	What Makes a Citizen? Contemporary Immigration and the Boundaries of Citizenry	Soc. Forces	Conjoint	Manipulated	8100	North America
Adida, Lo and Platas (2019)	Americans preferred Syrian refugees who are female, English-speaking, and Christian on the eve of Donald Trump's election	PLOS One	Conjoint	Refugees	10800	North America
Alarian and Neureiter (2021)	Values or origin? Mandatory immigrant integration and immigration attitudes in Europe	JEMS	Factorial	Migrants	1651	Europe and Central Asia
Alrababa'h et al. (2021)	Attitudes toward migrants in a highly impacted economy: Evidence from the Syrian refugee crisis in Jordan	CPS	Conjoint	Refugees	14246	Middle East and North Africa
Arias and Blair (2022)	Changing Tides: Public Attitudes on Climate Migration	JOP	Conjoint	Manipulated	37828	North America, Europe and Central Asia
Bansak, Hainmueller and Hangartner (2016)	How economic, humanitarian, and religious concerns shape European attitudes toward asylum seekers	Science	Conjoint	Manipulated	178740	Europe and Central Asia
Bansak, Hainmueller and Hangartner (2023)	Europeans' support for refugees of varying background is stable over time	Nature	Conjoint	Manipulated	149660	Europe and Central Asia
Brooks, Manza and Cohen (2016) - Ethnic names	Political Ideology and Immigrant Acceptance	Socius	Vignette	Migrants	1000	North America
Brooks, Manza and Cohen (2016) - Fitting-in	Political Ideology and Immigrant Acceptance	Socius	Factorial	Migrants	1000	North America
Castellano, Dolšak and Prakash (2021)	Willingness to help climate migrants: A survey experiment in the Korail slum of Dhaka, Bangladesh	PLOS One	Vignette	Manipulated	1800	South Asia
Charnysh et al. (unpublished)	Displaced people and political life in Poland		Conjoint	Refugees	27596	Europe and Central Asia
Claassen and McLaren (2021)	Do Threats Galvanize Authoritarians or Mobilize Nonauthoritarians? Experimental Tests from 19 European Societies	Polit Psychol.	Factorial	Migrants	37623	Europe and Central Asia
Clayton, Ferwerda and Horiuchi (2021)	Exposure to Immigration and Admission Preferences: Evidence from France	Political Behav.	Conjoint	Manipulated	29336	Europe and Central Asia

Cogley, Doces and Whitaker (2019)	Which Immigrants Should Be Naturalized? Which Should Be Deported? Evidence from a Survey Experiment in Côte d'Ivoire	PRQ	Conjoint	Migrants	1500	Sub-Saharan Africa
Czymara and Schmidt-Catran (2017)	Refugees Unwelcome? Changes in the Public Acceptance of Immigrants and Refugees in Germany in the Course of Europe's 'Immigration Crisis'	Eur. Sociol. Rev.	Conjoint	Manipulated	18032	Europe and Central Asia
D'Urso and Bonilla (2023)	Religion or Race? Using Intersectionality to Examine the Role of Muslim Identity and Evaluations on Belonging in the United States	JREP	Conjoint	Migrants	5937	North America
Denney and Green (2021)	Who should be admitted? Conjoint analysis of South Korean attitudes toward immigrants	Ethnicities	Conjoint	Manipulated	12096	East Asia and Pacific
Diehl, Hinz and Auspurg (2018)	Who Is Afraid of Skilled Migrants From Europe? Exploring Support for Immigration Control in Switzerland	Swiss J. Sociol.	Conjoint	Migrants	5680	Europe and Central Asia
Erisen and Kentmen-Cin (2017)	Tolerance and perceived threat toward Muslim immigrants in Germany and the Netherlands	EUP	Vignette	Migrants	1353	Europe and Central Asia
Erlich, Soehl and Chen (2023)	Discriminatory Immigration Bans Elicit Anti-Americanism in Targeted Communities: Evidence from Nigerian Expatriates	JEPS	Conjoint	Migrants	3034	Sub-Saharan Africa
Fietkau and Hansen (2018)	How perceptions of immigrants trigger feelings of economic and cultural threats in two welfare states	EUP	Factorial	Migrants	6096	Europe and Central Asia
Filindra, Nassar and Buyuker (2022)	The conditional relationship between cultural and economic threats in white Americans support for refugee relocation programs	SSQ	Factorial	Refugees	706	North America
Findor et al. (2022)	Who Should Be Given an Opportunity to Live in Slovakia? A Conjoint Experiment on Immigration Preferences	JIRS	Conjoint	Migrants	8730	Europe and Central Asia
Flores and Schachter (2018)	Who are the "Illegals"? The Social Construction of Illegality in the United States	Am. Sociol. Rev	Conjoint	Migrants	42030	North America
Flores et al. (2022)	U.S. public perceptions of Mexican immigrants: Effects of immigrant acculturation strategy, documentation status, and gender and participants' social dominance	IJIR	Factorial	Migrants	243	North America
Ford and Mellon (2020)	The skills premium and the ethnic premium: a cross-national experiment on European attitudes to immigrants	JEMS	Factorial	Migrants	38798	Europe and Central Asia
Ford (2016)	Who Should We Help? An Experimental Test of Discrimination in the British Welfare State	Political Stud.	Vignette	Migrants	991	Europe and Central Asia
Gaikwad and Nellis (2017)	The Majority-Minority Divide in Attitudes toward Internal Migration: Evidence from Mumbai	AJPS	Vignette	Internal migrants	1585	South Asia
Gaikwad and Nellis (2021)	Do Politicians Discriminate Against Internal Migrants? Evidence from Nationwide Field Experiments in India	AJPS	Field experiment	Internal migrants	1513	South Asia

Gereke, Schaub and Baldassarri (2020)	Gendered discrimination against immigrants: experimental evidence	Front. sociol.	Behavioural game	Migrants	1243	Europe and Central Asia
Graf et al. (2023)	Migrants, asylum seekers, and refugees: Different labels for immigrants influence attitudes through perceived benefits in nine countries	Eur. J. Soc. Psychol.	Vignette	Manipulated	2766	Europe and Central Asia
Ha, Cho and Kang (2016)	Group cues and public opposition to immigration: evidence from a survey experiment in South Korea	JEMS	Vignette	Migrants	1737	East Asia and Pacific
Hainmueller and Hiscox (2010)	Attitudes toward highly skilled and low-skilled immigration: Evidence from a survey experiment	APSR	Vignette	Migrants	1601	North America
Hainmueller and Hopkins (2015)	The hidden American immigration consensus: A conjoint analysis of attitudes toward immigrants	AJPS	Conjoint	Manipulated	14018	North America
Hanania (2021)	Cui Bono? Partisanship and Attitudes Toward Refugees	SSQ	Factorial	Refugees	1452	North America
Hartman and Morse (2020)	Violence, empathy and altruism: Evidence from the Ivorian refugee crisis in Liberia	BJPS	Conjoint	Refugees	6540	Sub-Saharan Africa
Hartman, Morse and Weber (2021)	Violence, Displacement, and Support for Internally Displaced Persons: Evidence from Syria	JCR	Conjoint	IDPs	13860	Middle East and North Africa
Hartman, Newman and Scott Bell (2014)	Decoding Prejudice Toward Hispanics: Group Cues and Public Reactions to Threatening Immigrant Behavior	Political Behav.	Vignette	Migrants	275	North America
Hedegaard and Larsen (2022)	Who can become a full member of the club? Results from a conjoint survey experiment on public attitudes about the naturalisation of non-EU migrants in Germany, the Netherlands, Sweden and Denmark	SPS	Conjoint	Migrants	48438	Europe and Central Asia
Hedegaard and Larsen (2023)	The hidden European consensus on migrant selection: a conjoint survey experiment in the Netherlands, Germany, Sweden, and Denmark	Acta Politica	Conjoint	Manipulated	48438	Europe and Central Asia
Hedegaard (2022)	Attitudes to Climate Migrants: Results from a Conjoint Survey Experiment in Denmark	SPS	Conjoint	Manipulated	12078	Europe and Central Asia
Helbling and Kriesi (2014)	Why Citizens Prefer High- Over Low-Skilled Immigrants. Labor Market Competition, Welfare State, and Deservingness	Eur. Sociol. Rev.	Conjoint	Migrants	2468	Europe and Central Asia
Helbling and Traunmüller (2020)	What is Islamophobia? Disentangling Citizens' Feelings Toward Ethnicity, Religion and Religiosity	BJPS	Factorial	Migrants	2975	North America
Helbling (2020)	Attitudes towards climate change migrants	Clim. Change	Factorial	Manipulated	1102	Europe and Central Asia
Henning, Steimanis and Vollan (2022)	(Climate) Migrants welcome? Evidence from a survey experiment in Austria	Reg. Environ. Change	Vignette	Manipulated	1197	Europe and Central Asia

Hoewe (2018)	Coverage of a Crisis: The Effects of International News Portrayals of Refugees and Misuse of the Term 'Immigrant'	Am. Behav. Sci.	Vignette	Manipulated	204	North America
Igarashi, Miwa and Ono (2022)	Why do citizens prefer high-skilled immigrants to low-skilled immigrants? Identifying causal mechanisms of immigration preferences with a survey experiment	Research & Politics	Factorial	Migrants	3000	East Asia and Pacific
Jeannet (2018)	Revisiting the labor market competition hypothesis in a comparative perspective: Does retirement affect opinion about immigration?	Research & Politics	Vignette	Migrants	1995	Europe and Central Asia
Jungkunz, Helbling and Schwemmer (2019)	Xenophobia before and after the Paris 2015 attacks: evidence from a natural experiment	Ethnicities	Vignette	Migrants	215	Europe and Central Asia
Kage, Rosenbluth and Tanaka (2022)	Varieties of Public Attitudes toward Immigration: Evidence from Survey Experiments in Japan	PRQ	Conjoint	Migrants	28850	East Asia and Pacific
Kao (unpublished)	Discrimination Among Migrants and Host Community Members in Turkey: A Pre-Analysis Plan		Conjoint	Migrants	16545	Europe and Central Asia
Karinen et al. (2019)	Disgust sensitivity and opposition to immigration: does contact avoidance or resistance to foreign norms explain the relationship?	J. Exp. Soc. Psychol.	Vignette	Migrants	1307	North America
Kortendiek and Oertel (2023)	Caught between Vulnerability and Competence: UNHCR Visual Framing of Refugees, Economic Threat Perceptions and Attitudes toward Asylum Seekers in Germany	JIRS	Vignette	Refugees	552	Europe and Central Asia
Liebe et al. (2018)	From welcome culture to welcome limits? Uncovering preference changes over time for sheltering refugees in Germany	PLOS One	Conjoint	Manipulated	15146	Europe and Central Asia
Malhotra and Newman (2017)	Explaining immigration preferences: Disentangling skill and prevalence	Research & Politics	Factorial	Migrants	12052	North America
Margalit and Solodoch (2022)	Against the Flow: Differentiating Between Public Opposition to the Immigration Stock and Flow	BJPS	Conjoint	Manipulated	17976	North America
Mayer et al. (2023)	The hidden majority/minority consensus: Minorities show similar preference patterns of immigrant support as the majority population	Br. J. Sociol.	Factorial	Migrants	9333	Europe and Central Asia
Mengesha (unpublished)	Factors Shaping Public Attitudes Towards Refugees: Empirical Evidence from Ethiopia		Conjoint	Refugees	3240	Sub-Saharan Africa
Naumann, Stoetzer and Pietrantuono (2018)	Attitudes towards highly skilled and low-skilled immigration in Europe: A survey experiment in 15 European countries	EJPR	Vignette	Migrants	25500	Europe and Central Asia

Newman and Malhotra (2019) - Mturk	Economic Reasoning with a Racial Hue: Is the Immigration Consensus Purely Race Neutral?	JOP	Factorial	Migrants	1609	North America
Newman and Malhotra (2019) - SSI	Economic Reasoning with a Racial Hue: Is the Immigration Consensus Purely Race Neutral?	JOP	Factorial	Migrants	990	North America
Ravn and Bredgaard (2021)	Employer Preferences Towards Recruitment of Refugees – A Danish Vignette Study	Nord. J. Migr. Res.	Factorial	Refugees	1168	Europe and Central Asia
Rich, Bison and Kozovic (2021)	Who is welcome? South Korean public opinion on North Koreans and other refugees	JJPS	Factorial	Refugees	1111	East Asia and Pacific
Semyonov et al. (2023)	The impact of immigrants' characteristics on anti-immigrant sentiment among the Jewish majority and the Arab minority in Israel	JEMS	Conjoint	Manipulated	5443	Middle East and North Africa
Shaffer et al. (2020)	Local elected officials receptivity to refugee resettlement in the United States	PNAS	Conjoint	Refugees	3324	North America
Shao et al. (2023)	Racial and gender stereotypes in immigration attitudes: evidence from China	JEMS	Factorial	Migrants	2944	East Asia and Pacific
Shockley and Gengler (2024)	Sharing citizenship: economic competition, cultural threat, and immigration preferences in the rentier state	PSRM	Conjoint	Migrants	3444	Middle East and North Africa
Singer and Quek (2022)	Public attitudes toward internal and foreign migration: evidence from China	POQ	Factorial	Migrants	1479	East Asia and Pacific
Solodoch (2021)	Do Sociotropic Concerns Mask Prejudice? Experimental Evidence on the Sources of Public Opposition to Immigration	Political Stud.	Vignette	Manipulated	4764	Europe and Central Asia
Spilker et al. (2020)	Attitudes of urban residents towards environmental migration in Kenya and Vietnam	Nat. Clim. Change.	Conjoint	Manipulated	24290	Sub-Saharan Africa, East Asia and Pacific
Steele, Abdelaaty and Than (2023)	Attitudes about refugees and immigrants arriving in the United States: a conjoint experiment	ERS	Conjoint	Manipulated	5114	North America
Stoop et al. (unpublished)	Whom to Host? New Evidence from the Congo		Conjoint	IDPs	8416	Sub-Saharan Africa
Strabac et al. (2016)	Wearing the veil: hijab, Islam and job qualifications as determinants of social attitudes towards immigrant women in Norway	ERS	Factorial	Migrants	810	Europe and Central Asia
Strabac, Aalberg and Valenta (2014)	Attitudes towards Muslim Immigrants: Evidence from Survey Experiments across Four Countries	JEMS	Vignette	Migrants	3999	Europe and Central Asia, North America
Thomsen and Juhl (2023)	Contact Experiences Shape the Outcomes of Interethnic Differences: Elaborating Social Identity Theory	Ethnopolitics	Vignette	Migrants	2632	Europe and Central Asia
Timberlake et al. (2015)	Who 'They' are Matters: Immigrant Stereotypes and Assessments of the Impact of Immigration	TSQ	Vignette	Migrants	2114	North America

Tremblay-Boire, Prakash and Calderon (2023)	Delivering public services to the underserved: Nonprofits and the Latino threat narrative	Public Adm. Rev.	Factorial	Migrants	348	North America
Turper et al. (2015)	Who is Less Welcome?: The Impact of Individuating Cues on Attitudes towards Immigrants	JEMS	Factorial	Migrants	5049	Europe and Central Asia
Turkoglu (unpublished)	Security Concerns and Attitudes toward Refugees		Conjoint	Refugees	12010	Europe and Central Asia
Valentino et al. (2019)	Economic and Cultural Drivers of Immigrant Support Worldwide	BJPS	Factorial	Migrants	39505	East Asia and Pacific, North America, Europe and Central Asia
Valsecchi et al. (2023)	Inclusive social norms and nationals positive intergroup orientations toward refugees: the moderating role of initial predjudice and intergroup contact	Group Process. Intergr. Relat.	Vignette	Manipulated	316	Europe and Central Asia
Ward (2019)	Public Attitudes toward Young Immigrant Men	APSR	Vignette	Migrants	17088	Europe and Central Asia

A.4   Geographical Coverage of Studies

Figure A1 displays the geographical coverage of all studies included in the meta-analysis in comparison to global migrant populations. The first heat map shows displays the studied population in the meta-analysis, or the overall amount of respondents per country. The map shows a general focus on the United States and Germany as well as a broader interest in Europe as migration destination while other parts of the world are not or only covered by few studies and respondents. The second map displays the average annual number of forcibly displaced populations since 2000 per country, based on data from UNHCR. In comparison to the researched population, most forcibly displaced populations find refuge in central parts of Africa, the Middle East and specific countries such as Colombia. Hence, the researched population does not reflect well where displaced populations actually seek shelter. The final map shows the average migration rate, i.e. the percentage of migrants per population, across the globe with data from the UN Population Division. Again, one can see that regional migration hubs exist, such as the Gulf States, Australia and Canada, that are not necessarily well reflected in the researched population.

Figure A1: Geographical Coverage of Studies
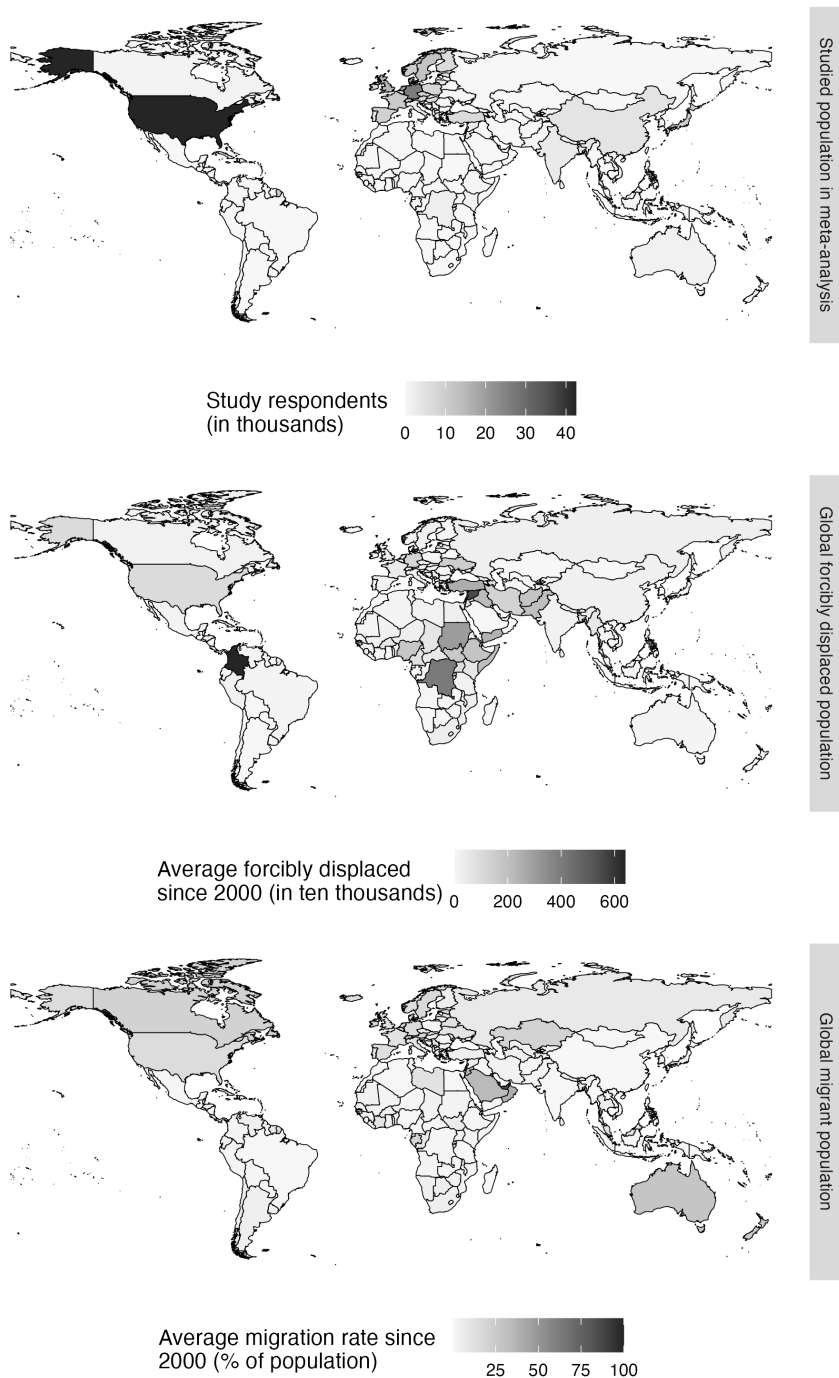
Notes: Geographical coverage of studies in comparison to global migrant populations. Data from UNHCR and UN Population Division, authors' analysis.

Table A2 provides the codebook for how the different studies were standardized.

Table A2: Codebook for the meta-analysis

Attribute	Description	Levels
choice	An indicator of the preference of the respondent for the migrant. Must be scaled between 0 (not picked in a forced choice or completely disliked) and 1 (picked in a forced choice or completely preferred)	Between 0 and 1
Experimental attributes: Socio-demographics		
attr_gender	A binary experimental indicator for the gender of the migrant	Female — Male
attr_children	A binary experimental attribute specifying whether the migrant has children or not	Has children — No children
attr_age	The experimentally varied age of the migrant in age brackets	Age <= 25 — Age <= 40 — Age < 60 — Age >= 60
attr_marital_status	An experimental attribute that distinguishes between married, single, and widowed migrants	Married/Couple — Single — Widowed
Experimental attributes: Religious and ethnic identity		
attr_ethnic_outgroup	An indicator of whether the migrant described in the experiment is an ethnic ingroup or outgroup. Depending on the study, this can or cannot require knowledge of the ethnic identity of the respondent	Ethnic ingroup — Ethnic outgroup
attr_religion	An indicator of the religion of the migrant	Agnostic — Christian — Muslim — Hindu
attr_muslim	An indicator whether the migrant is Muslim or not to test anti-Muslim bias	Muslim migrant — Non-Muslim migrant
attr_skin_color	An indicator of the skin color of the migrant	Dark — Light
attr_religious_outgroup	A binary experimental attribute specifying whether the migrant is part of the respondent's religious in- or outgroup. This indicator may require knowledge of the religious identity of the respondent	Religious ingroup — Religious outgroup
attr_reason	An indicator for the main reason why individuals moved	Climate migrant — Economic migrant — Family reunification — Forced migrant
attr_citizen	An indicator whether the migrant has obtained citizenship or not	Has no citizenship — Has obtained citizenship
Experimental attributes: Reasons to move		
attr_asylum_testimony	An attribute of the experiment indicating whether the migrant had any inconsistencies in their asylum testimony	Major testimony inconsistencies — Minor testimony inconsistencies — No testimony inconsistencies
attr_relatives	A binary experimental attribute whether the migrant has or has no relatives in the community	No relatives in the community — Relatives in the community
attr_previous_visits	An indicator whether the migrant has previously been to the community or not as well as whether entry was legal/documented	Entered without legal authorization — Never visited before — Visited on tourist visa before — Lived for months in country — Lived for over 10 years in country — Originally born in country

| Attribute	Description	Levels
attr_continent	A string indicator providing the origin continent of the person on the move. World Bank regions	East Asia and Pacific — Europe and Central Asia — Latin America and Caribbean — Middle East and North Africa — North America — South Asia — Sub-Saharan Africa
attr_country	A string indicator providing the country name of the migrant's origin country. In some studies this might not vary (all migrants are from one country). In other studies, this might be manipulated empirically	Afghanistan, China, Côte d'Ivoire, Eritrea, France, Germany . . .
attr_region_match	An indicator whether the region of the respondent overlaps with the world region of the migrant or not	Same world region — Different world region
attr_north_south	An indicator whether the migrant is from the Global South or North	Global North — Global South
attr_prevalence	A string indicator providing information on whether many or few migrants arrive from this group	Few immigrants — Many immigrants
attr_length	An indicator whether the migrant is planning to stay for the short or long term	Short-term — Long-term
attr_external	An indicator whether the migrant is external or internal migrant	External migrant — Internal migrant
Experimental attributes: Education and language skills		
attr_education	An attribute of the experiment specifying the level of education of the migrant	No education — Primary — Secondary — University — Vocational
attr_educ_match	An indicator whether the education level of the respondent and the migrant match for high and low educated respondents or do not match	Match (high-skilled) — Match (low-skilled) — Non-match
attr_language	An attribute of the experiment that varies the language skills of the migrant	Broken language — Fluent language — Unable to speak language
attr_integration	An attribute describing the willingness or ability to integrate	Not aware of culture and traditions — Somewhat aware of culture and traditions — Very aware of culture and traditions
attr_skills_training	An attribute of the experiment that varies the level of job skills, training or experience of the migrant	No/limited training/experience (less than 3y) — Extensive training/experience (more than 3y)
Experimental attributes: Economic self-reliance skills		
attr_occupation	An indicator in the experiment specifying whether the migrant is employed and whether this employment is a low skill job (worker and framer) or high skill job (professional occupations like teacher, doctor, computer programmer, . . .)	Professional occupation — Unemployed — Worker/Farmer — Student/Pensioner
attr_income	Indicator whether income of migrant is low, middle or high	Low income — Middle income — High income
attr_benefits	An attribute of the experiment indicating on which benefits the migrant relies to cover expenses	Relies on government charity — Relying on int. org — Relying on own self — Relies on NGO — Business sponsorship
attr_employment_plans	An attribute of the experiment that varies the employment plans of the migrant	Has no connection to the labor market — Has done job interviews — Has employee contract — No plans to look for work — Plans to search for jobs — Has a verbal job offer

Attribute	Description	Levels
attr_competition	Job search in competition with natives	Job search in competition with natives — No job competition

Experimental attributes: Political engagement and experiences of political violence

Attribute	Description	Levels
attr_needs	An attribute that specifies any needs that may be specific to the migrant. This variable is a collection of various potential vulnerabilities	No special needs — No surviving family — Physically handicapped — Post-traumatic stress — Sick child — Torture victim — Food insecurity
attr_residence	An indicator whether the person is located in a camp or not	Camp residence — Outside of camps
attr_violence	An attribute of the experiment indicating to what extent the migrant was involved in crime or violence at home in an active or passive way	No conflict participation (victim) — Participation in perpetrator group — Participation in self-defense militia
attr_criminal	An attribute whether the migrant has a criminal background and/or faces criminal charges	Criminal background — No criminal convictions
attr_politics	An attribute describing the political activism of migrants	Intentions to vote — No intentions to vote
attr_voting	An indicator how the migrant is expected to vote	Democrat — Republican

Respondent characteristics

Attribute	Description	Levels
resp_id	A string variable uniquely identifying the respondent. This should not just be a number (1,2,3) because they might exist in multiple datasets but rather a unique string. Create it by using the first letters of the authors' surnames followed by an underscore (e.g. HMV_1 for Hartman, Morse, Weber)	Unique values, string
resp_gender	A binary indicator whether the respondent is female or male	Female — Male
resp_age	A binary indicator whether the respondent is over or under 45. 45 is included in "Over 45"	Over 45 — Under 45
resp_unemployed	A binary indicator whether the respondent is unemployed or not	Employed — Unemployed
resp_education	A categorical variable whether the respondent has finished higher education, secondary school, primary school or no education	Higher education — Secondary school — Primary school — None
resp_income	A binary indicator whether the respondent qualifies as low or high income in their respective countries. Can be based on a median split in the survey	High income — Low income
resp_host	A binary indicator whether the respondent currently hosts displaced persons or not	Hosts — No hosts
resp_immigrant	A binary indicator whether the respondent has an immigration background or not	Home born — Immigrant background
resp_violence	A binary indicator whether the respondent has experienced some form of violence in the recent past (including GBV)	High violence — Low violence
resp_religion	An indicator for the respondent's main religion	Buddhist — Christian — Jewish — Muslim — No faith — Other religion
resp_ethnocentrism	An indicator whether the respondent scores high, middle or low on measures of ethnocentrism	High ethnocentrism — Middle ethnocentrism — Low ethnocentrism
resp_ethnic	An indicator of the ethnic general identity of the respondent	Asian — Black — Hispanic — Middle Eastern — Mixed/Other — Native American — White

Attribute	Description	Levels
resp_party	An indicator of the respondents preferred party	Democrat — Independent — Social Democrats — Christian Democrats/Conservatives — Right-wing/National Conservatives — The Greens — Radical Left — Liberals — Other — Republican
resp_ideology	An indicator of the ideological positioning of the respondent on a left to right scale. Break down numeric scales into categories	Far Left — Left — Center — Right — Far Right

Study characteristics

study	A string variable identifying the study through author names and year of the authors.	e.g. Author1 & Author2 (Year) or Author 1 et al. (Year)
journal	A string variable identifying the journal the study was published in, using common acronyms. For unpublished working papers, use "Unpublished".	e.g. AJPS
outcome	A short string variable identifying what the main outcome of the study is.	Admission — Donation — Feeling thermometer — General attitudes index — Hiring — Hosting — Increasing migration — Citizenship — Permanent residence — Neighbor preference — Perceived legality — Responsiveness — Welfare access — Work permit
experiment	A short string variable identifying the type of experiment that was run.	Conjoint — Factorial — Vignette — Field experiment — Behavioural game
study_unit	A string variable identifying the unit of analysis of the study	Individual — Elected official — Firms
country	A string variable identifying the country in which the study was run. For multi-site studies, this variable can vary within the study.	Australia, Austria, Czech Republic, . . .
region	A string variable identifying the country region. World Bank regions	East Asia and Pacific — Europe and Central Asia — Latin America and Caribbean — Middle East and North Africa — North America — South Asia — Sub-Saharan Africa
country_type	A classification of the country in which the study was run as "Developed/High income" or "Developing/Low income" variable	Developed/High income — Developing/Low income
migrant_type	The main migrant type that is studied in the respective study. Put "Manipulated" if changed in the experiment	Manipulated — IDPs — Internal migrants — Migrants — Refugees
origin_country	The country of origin of the migrant population used in the study. If this varies within the experiment, put "Manipulated". If not explicitly mentioned in the experiment or framing of the paper, use "Not specified". If framed as migrants from a specific context, use "Single origin" and name of context	Manipulated — Not specified — Single origin (<country>)
country_religion	An indicator whether the country of study has a dominant religion	Christian-majority country — Country with diversity, other dominant religions or secular majorities — Muslim-majority country
title	The exact title of the study	
n	Numeric vector giving the sample size	

A.6 Mapping of Attributes across Studies

Figure A2 shows which attributes are present in which study according to our coding protocol. Entries in grey indicate that an attribute is present in a study but has not been analysed because less than 5 studies include the attribute. Black indicates an attribute that is present in a given study and has been meta-analysed in either the appendix or the full paper.
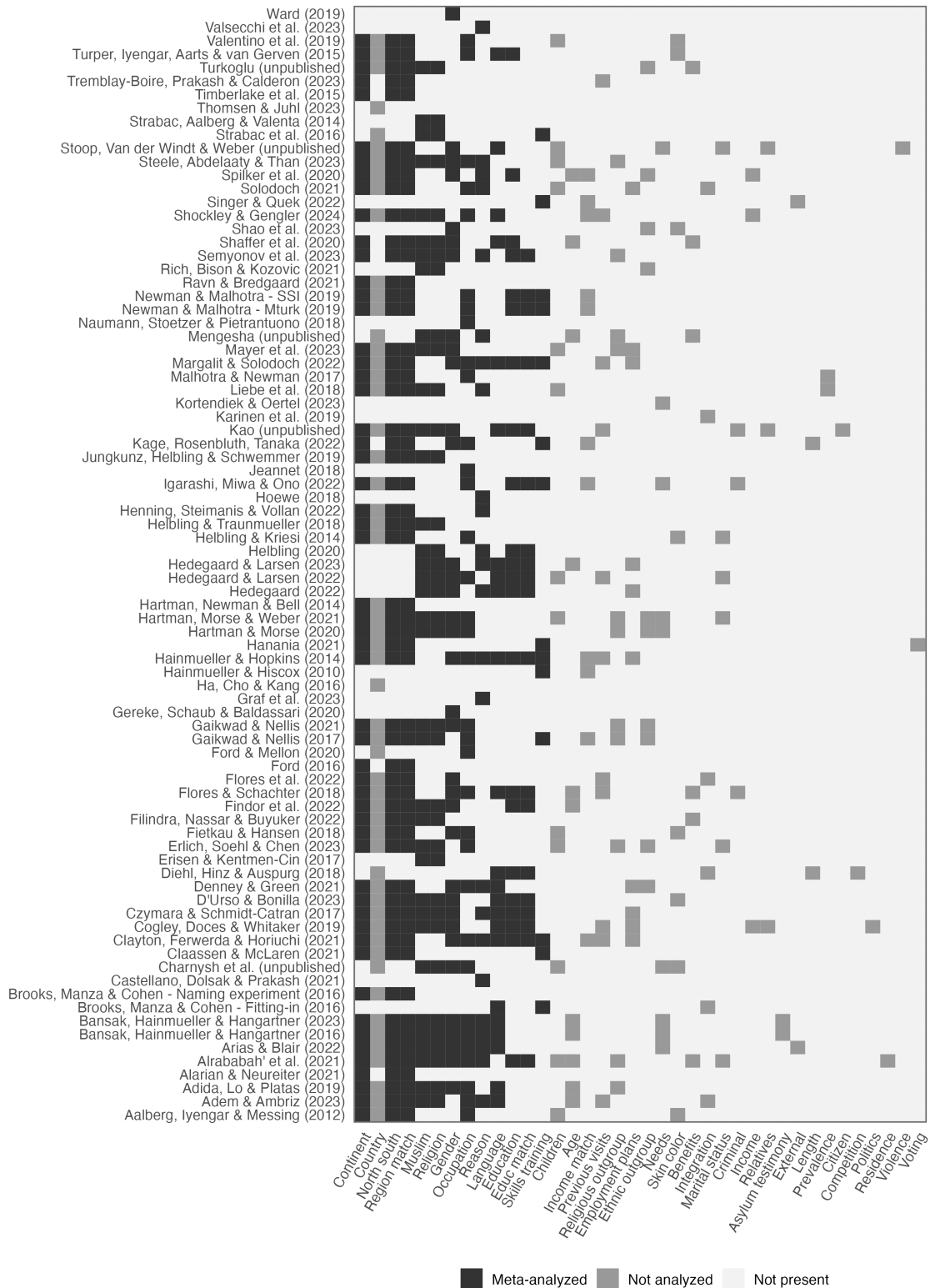
Notes: Mapping of attribute presence in each study included in the meta-analysis.

A.7 Example Mapping of Original and Recoded Attributes and Levels

Table A3 provides the original attributes and treatment levels for 8 experimental studies (as examples) and maps these levels on to the recoded attributes and levels as outlined in the codebook.

Table A3: Mapping of original attributes and levels on recoded attributes and levels

Study	Original attribute	Original level	Recoded attribute	Recoded level
Hartman & Morse (2020)	Gender of HH	Male	Gender	Male
	Gender of HH	Female	Gender	Female
	Ethnicity	Coethnic	Ethnic outgroup	Ethnic ingroup
	Ethnicity	Not Coethnic	Ethnic outgroup	Ethnic outgroup
	Religion	Christian	Religion	Christian
	Religion	Muslim	Religion	Muslim
	Occupation	Farmer	Occupation	Worker/Farmer
	Occupation	Not Farmer	Occupation	Professional occupation
	Food	Have food	Needs	No special needs
	Food	Do not have food	Needs	Food insecurity
Hartman, Morse & Weber (2021)	Status of HH	Single mother	Gender	Female
			Marital status	Single
	Status of HH	Mother & father	Gender	Male and female
			Marital status	Married/Couple
	Ethnicity	Arabic speaker	Ethnic outgroup	Ethnic ingroup
	Ethnicity	Kurdish speaker	Ethnic outgroup	Ethnic outgroup
	Religion	Christian	Religion	Christian
	Religion	Muslim	Religion	Muslim
	Occupation	Farmer	Occupation	Worker/Farmer
	Occupation	Professional	Occupation	Professional occupation
	Health of child	Sick	Needs	Sick child
	Health of child	Healthy	Needs	No special needs

Study	Original attribute	Original level	Recoded attribute	Recoded level
Graf et al. (2023)	Label for immigrant	Migrants	Reason	Economic migrant
	Label for immigrant	Refugees	Reason	Forced migrant
	Label for immigrant	Asylum seekers	Reason	Forced migrant
Henning, Steimanis & Vollan (2022)	Causes of migration decision	Conflict migrant treatment	Reason	Forced migrant
	Causes of migration decision	Economic migrant treatment	Reason	Economic migrant
	Causes of migration decision	Environmental migrant due to climate change	Reason	Climate migrant
	Causes of migration decision	Environmental migrant	Reason	Climate migrant
Singer & Quek (2022)	Skill levels	High-skilled	Skills/training	Extensive training/experience (more than 3y)
	Skill levels	Low-skilled	Skills/training	No/limited training/experience (less than 3y)
	Internal vs external migration	Foreign countries who come to China to live	External	External migrant
	Internal vs external migration	From other provinces who come to the province or municipality where you are to live	External	Internal migrant
Solodoch (2021)	Country of origin	Morroco	Country	Morroco
			Continent	Middle East and North Africa
			South-North	Global South
	Country of origin	Suriname	Country	Suriname
			Continent	Latin America and Carribean
			South-North	Global South
	Country of origin	Netherlands Antilles	Country	Antilles
			Continent	Latin America and Carribean
			South-North	Global South
	Country of origin	South Africa	Country	South Africa

Study	Original attribute	Original level	Recoded attribute	Recoded level
			Continent	Sub-Saharan Africa
			South-North	Global South
	Country of origin	Indonesia	Country	Indonesia
			Continent	East Asia and Pacific
			South-North	Global South
	Country of origin	Turkey	Country	Turkey
			Continent	Europe and Central Asia
			South-North	Global North
	Occupation	Waiter	Occupation	Worker/Farmer
	Occupation	Mechanic	Occupation	Worker/Farmer
	Occupation	Truck driver	Occupation	Worker/Farmer
	Occupation	Nurse	Occupation	Worker/Farmer
	Occupation	Janitor	Occupation	Worker/Farmer
	Occupation	Engineer	Occupation	Professional occupation
	Occupation	Analyst	Occupation	Professional occupation
	Occupation	Scientist	Occupation	Professional occupation
	Occupation	Programmer	Occupation	Professional occupation
	Cultural knowledge	Knows Dutch culture	Integration	Very aware of culture and traditions
	Cultural knowledge	Some knowledge	Integration	Somewhat aware of culture and traditions
	Cultural knowledge	No knowledge	Integration	Not aware of culture and traditions
	Children	None	Children	No children
	Children	Two children	Children	Has children
	Children	Five children	Children	Has children
	Work Prospects	Has contract	Employment plans	Has employee contract
	Work Prospects	Job interview	Employment plans	Has done job interviews
	Work Prospects	Will look for a job	Employment plans	Plans to search for job
	Work Prospects	No job plans	Employment plans	No plans to look for jobs

Study	Original attribute	Original level	Recoded attribute	Recoded level
	Reason	Better job	Reason	Economic migrant
	Reason	Reunite	Reason	Family reunification
Hainmueller & Hopkins (2014)	Education level	No formal education	Education	No education
	Education level	Equivalent to completing fourth grade in the US	Education	Primary
	Education level	Equivalent to completing eighth grade in the US	Education	Secondary
	Education level	Equivalent to compelting high school in the US	Education	Secondary
	Education level	Equivalent to completing two years at college in the US	Education	University
	Education level	Equivalent to completing a college degree in the US	Education	University
	Education level	Equivalent to completing a graduate degree in the US	Education	University
	Gender	Female	Gender	Female
	Gender	Male	Gender	Male
	Country of origin	Germany	Country	Germany
			Continent	Europe and Central Asia
			South-North	Global North
	Country of origin	France	Country	France
			Continent	Europe and Central Asia
			South-North	Global North
	Country of origin	Mexico	Country	Mexico
			Continent	Latin America and Carribean
			South-North	Global South
	Country of origin	Philippines	Country	Philippines
			Continent	East Asia and Pacific

Study	Original attribute	Original level	Recoded attribute	Recoded level
			South-North	Global South
	Country of origin	Poland	Country	Poland
			Continent	Europe and Central Asia
			South-North	Global North
	Country of origin	India	Country	India
			Continent	South Asia
			South-North	Global South
	Country of origin	China	Country	China
			Continent	East Asia and Pacific
			South-North	Global South
	Country of origin	Sudan	Country	Sudan
			Continent	Sub-Saharan Africa
			South-North	Global South
	Country of origin	Somalia	Country	Somalia
			Continent	Sub-Saharan Africa
			South-North	Global South
	Country of origin	Iraq	Country	Iraq
			Continent	Middle East and North Africa
			South-North	Global South
	Language	During admission interview, this applicant spoke fluent English	Language	Fluent language
	Language	During admission interview, this applicant spoke broken English	Language	Broken language
	Language	During admission interview, this applicant tried to speak English but was unable	Language	Unable to speak language
	Language	During admission interview, this applicant spoke through an interpreter	Language	Unable to speak language

Study	Original attribute	Original level	Recoded attribute	Recoded level
	Reason for application	Reunite with family members already in the US	Reason	Family reunification
	Reason for application	Seek better job in US	Reason	Economic migrant
	Reason for application	Escape political/religious persecution	Reason	Forced migrant
	Profession	Gardener	Occupation	Worker/Farmer
	Profession	Waiter	Occupation	Worker/Farmer
	Profession	Nurse	Occupation	Worker/Farmer
	Profession	Teacher	Occupation	Professional occupation
	Profession	Child care provider	Occupation	Worker/Farmer
	Profession	Janitor	Occupation	Worker/Farmer
	Profession	Construction worker	Occupation	Worker/Farmer
	Profession	Financial analyst	Occupation	Professional occupation
	Profession	Research scientist	Occupation	Professional occupation
	Profession	Doctor	Occupation	Professional occupation
	Profession	Computer programmer	Occupation	Professional occupation
	Job experience	No job training or prior experience	Skills/training	No/limited training/experience (less than 3y)
	Job experience	One to two years	Skills/training	No/limited training/experience (less than 3y)
	Job experience	Three to five years	Skills/training	Extensive training/experience (more than 3y)
	Job experience	More than five years	Skills/training	Extensive training/experience (more than 3y)
	Employment plans	Has a contract with a US employer	Employment plans	Has employee contract
	Employment plans	Does not have a contract with a US employer, but has done job interviews	Employment plans	Has done job interviews

Study	Original attribute	Original level	Recoded attribute	Recoded level
	Employment plans	Will look for work after arriving in the US	Employment plans	Plans to search for job
	Employment plans	Has no plans to look for work at this time	Employment plans	No plans to look for jobs
	Prior trips to the US	Never been to the US	Previous visits	Never visited before
	Prior trips to the US	Entered the US once before on a tourist visa	Previous visits	Visited on tourist visa before
	Prior trips to the US	Entered the US once before without legal authorization	Previous visits	Entered without legal authorization
	Prior trips to the US	Has visited the US many times before on tourist visas	Previous visits	Visited on tourist visa before
	Prior trips to the US	Spent six months with family members in the US	Previous visits	Lived for months in country
Alrababah' et al. (2021)	Gender	Male	Gender	Male
	Gender	Female	Gender	Female
	Age	21 years	Age	Age <= 25
	Age	38 years	Age	Age <= 40
	Age	62 years	Age	Age >= 60
	Occupation in Syria	Unemployed	Occupation	Unemployed
	Occupation in Syria	Farmer	Occupation	Worker/Farmer
	Occupation in Syria	Barber	Occupation	Worker/Farmer
	Occupation in Syria	Accountant	Occupation	Professional occupation
	Occupation in Syria	Engineer	Occupation	Professional occupation
	Economic situation	Relies on UNHCR benefits	Benefits	Relies on int. org.
	Economic situation	Relise on Jordanian charities	Benefits	Relies on government charity
	Economic situation	Self-sufficient	Benefits	Relying on ownself
	Current place of residence	Zataari camp	Residence	Camp residence
	Current place of residence	Irbid	Residence	Outside of camps

Study	Original attribute	Original level	Recoded attribute	Recoded level
	Education level	Primary	Education	Primary
	Education level	Secondary	Education	Secondary
	Education level	Vocational	Education	Vocational
	Education level	University	Education	University
	Religious sect	Sunni	Religion	Muslim
	Religious sect	Orthodox Christian	Religion	Christian
	Religious sect	Alawite	Religion	Muslim
		Matches with respondent religion	Religious outgroup	Religious ingroup
		Mismatches with respondent religion	Religious outgroup	Religious outgroup
	Reason for fleeing	Political persecution	Reason	Forced migrant
	Reason for fleeing	Lack of job opportunities	Reason	Economic migrant
	Reason for fleeing	Abandoned unit after fighting in the Syrian war	Reason	Forced migrant
	Reason for fleeing	Violence near home	Reason	Forced migrant
	Family status	Single	Marital status	Single
			Children	No children
	Family status	Married without children	Marital status	Married/Couple
			Children	Has children
	Family status	Widowed without children	Marital status	Widowed
			Children	No children
	Family status	Widowed with children	Marital status	Widowed
			Children	Has children

B   Results of Main Meta-Analyses in Tabular Format

B.1   Results for Egocentric Economic Concerns

Table A4: Results in Figure 2 in Tabular Format

	FE	RE
Education match	0.016***	0.017**
	(0.003)	(0.005)
Education mismatch	-0.027***	-0.018***
	(0.003)	(0.005)
No. of study effects	38	38
No. of studies	19	19
τ^2 (10^{-4})	0.000	2.726
Cochran's Q_M	128.283	67.409
p-value for Q_M	0.000	0.000
Cochran's Q_E	828.684	828.684
p-value for Q_E	0.000	0.000
Residual DF	36	36
Log Likelihood	-303.787	-285.765
BIC	614.741	582.281

Notes: Meta-regression results for Figure 2. Estimated meta-effects of match between migrant's and respondent's education on positive attitudes towards migrants. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

Table A5: Results in Figure 3 in Tabular Format

	FE	RE
Skills/income match	-0.009^{*}	-0.009^{*}
	(0.004)	(0.004)
Skills/income mismatch	0.011^{**}	0.011^{**}
	(0.003)	(0.003)
No. of study effects	22	22
No. of studies	11	11
τ^2 (10^{-4})	0.000	0.000
Cochran's Q_M	16.416	16.416
p-value for Q_M	0.000	0.000
Cochran's Q_E	211.171	211.171
p-value for Q_E	0.000	0.000
Residual DF	20	20
Log Likelihood	-46.902	-46.902
Deviance	93.805	93.805
BIC	99.796	102.792

Notes: Meta-regression results for Figure 3. Estimated meta-effects of match between migrant's income or skills levels and respondent's income levels on positive attitudes towards migrants. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$.

B.2   Results for Sociotropic Economic Concerns

Table A6: Results in Figure 4 in Tabular Format

	FE	RE
Professional occupation	0.089***	0.094***
	(0.001)	(0.005)
Worker/Famer	−0.045***	−0.057***
	(0.001)	(0.005)
Unemployed	−0.151***	−0.155***
	(0.003)	(0.006)
Student/Pensioner	0.005	−0.017
	(0.009)	(0.013)
No. of study effects	73	73
No. of studies	33	33
τ^2 (10^{-4})	0.000	6.239
Cochran's Q_M	7139.716	7393.354
p-value for Q_M	0.000	0.000
Cochran's Q_E	6756.787	6756.787
p-value for Q_E	0.000	0.000
Residual DF	69	69
Log Likelihood	−3150.789	−2921.096
BIC	6318.515	5863.363

Notes: Meta-regression results for Figure 4: Estimated meta-effects of migrant's occupation on positive attitudes towards migrants. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

Table A7: Results in Figure 5 in Tabular Format

	FE	RE
Broken language	-0.014***	-0.029***
	(0.002)	(0.007)
Fluent language	0.099***	0.096***
	(0.002)	(0.007)
Unable to speak language	-0.111***	-0.131***
	(0.002)	(0.007)
No. of study effects	59	59
No. of studies	23	23
τ^2 (10^{-4})	0.000	9.611
Cochran's Q_M	6626.281	6912.973
p-value for Q_M	0.000	0.000
Cochran's Q_E	1442.721	1442.721
p-value for Q_E	0.000	0.000
Residual DF	56	56
Log Likelihood	-535.171	-358.245
BIC	1082.418	732.591

Notes: Meta-regression results for Figure 5: Estimated meta-effects of migrant's language skills on positive attitudes towards migrants. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

Table A8: Results in Figure A5 in Tabular Format

	FE	RE
Extensive training/experience (more than 3y)	0.100***	0.100***
	(0.003)	(0.004)
No/limited training/experience (less than 3y)	−0.094***	−0.094***
	(0.003)	(0.004)
No. of study effects	28	28
No. of studies	14	14
τ^2 (10^{-4})	0.000	0.156
Cochran's Q_M	1903.284	1899.703
p-value for Q_M	0.000	0.000
Cochran's Q_E	2649.026	2649.026
p-value for Q_E	0.000	0.000
Residual DF	26	26
Log Likelihood	−1250.477	−1250.177
BIC	2507.471	2510.129

Notes: Meta-regression results for Figure A5: Estimated meta-effects of migrant's skill levels on positive attitudes towards migrants. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

B.3 Results for Cultural Concerns

Table A9: Results in Figure 6 in Tabular Format

	FE	RE
Global North	0.022***	0.021***
	(0.002)	(0.003)
Global South	−0.008***	−0.011***
	(0.001)	(0.002)
No. of study effects	76	76
No. of studies	38	38
τ^2 (10^{-4})	0.000	0.515
Cochran's Q_M	213.797	206.464
p-value for Q_M	0.000	0.000
Cochran's Q_E	728.139	728.139
p-value for Q_E	0.000	0.000
Residual DF	74	74
Log Likelihood	−139.361	−123.422
BIC	287.331	259.756

Notes: Meta-regression results for Figure 6: Estimated meta-effects of migrant's world region on positive attitudes towards migrants. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

Table A10: Results in Figure 7 in Tabular Format

	FE	RE
Different world region	−0.002**	−0.004
	(0.001)	(0.003)
Same world region	0.011***	0.011***
	(0.002)	(0.003)
No. of study effects	52	52
No. of studies	26	26
τ^2 (10^{-4})	0.000	0.977
Cochran's Q_M	37.011	43.015
p-value for Q_M	0.000	0.000
Cochran's Q_E	852.392	852.392
p-value for Q_E	0.000	0.000
Residual DF	50	50
Log Likelihood	−266.975	−236.756
BIC	541.774	485.249

Notes: Meta-regression results for Figure 7: Estimated meta-effects of match between migrant's and respondent's regions on positive attitudes towards migrants. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

Table A11: Results in Figure 8 in Tabular Format

	FE	RE
Agnostic	0.016***	0.024***
	(0.002)	(0.005)
Christian	0.074***	0.081***
	(0.002)	(0.005)
Muslim	−0.074***	−0.075***
	(0.002)	(0.005)
Hindu	−0.000	0.002
	(0.005)	(0.008)
No. of study effects	91	91
No. of studies	36	36
τ^2 (10^{-4})	0.000	6.363
Cochran's Q_M	3380.677	3607.773
p-value for Q_M	0.000	0.000
Cochran's Q_E	2157.322	2157.322
p-value for Q_E	0.000	0.000
Residual DF	86	86
Log Likelihood	−820.823	−714.673
BIC	1663.919	1456.073

Notes: Meta-regression results for Figure 8: Estimated meta-effects of migrant's religion on positive attitudes towards migrants. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

Table A12: Results in Figure 9 in Tabular Format

	FE	RE
Female	0.048***	0.045***
	(0.001)	(0.002)
Male	−0.050***	−0.053***
	(0.001)	(0.002)
Male and female	0.024***	0.041***
	(0.004)	(0.006)
No. of study effects	72	72
No. of studies	35	35
τ^2 (10^{-4})	0.000	0.855
Cochran's Q_M	2923.870	2950.081
p-value for Q_M	0.000	0.000
Cochran's Q_E	1045.452	1045.452
p-value for Q_E	0.000	0.000
Residual DF	69	69
Log Likelihood	−292.601	−290.970
BIC	597.905	598.876

Notes: Meta-regression results for Figure 9: Estimated meta-effects of migrant's gender on positive attitudes towards migrants. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

Table A13: Results in Figure 10 in Tabular Format

	FE	RE
Economic migrant	-0.116^{***}	-0.115^{***}
	(0.002)	(0.010)
Family reunification	0.054^{***}	0.064^{***}
	(0.004)	(0.011)
Forced migrant	0.062^{***}	0.109^{***}
	(0.001)	(0.010)
Climate migrant	-0.011^{**}	-0.030^{**}
	(0.004)	(0.011)
No. of study effects	63	63
No. of studies	24	24
τ^2 (10^{-4})	0.000	18.796
Cochran's Q_M	7218.777	6286.448
p-value for Q_M	0.000	0.000
Cochran's Q_E	3548.976	3548.976
p-value for Q_E	0.000	0.000
Residual DF	59	59
Log Likelihood	-1596.032	-1139.093
BIC	3208.375	2298.574

Notes: Meta-regression results for Figure 10: Estimated meta-effects of migrant's reason for migration on positive attitudes towards migrants. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$.

B.5   Split-Sample Results for Subgroups

Table A14: Meta-regression results for Figure 11. Showing results by type of migrant, meta-model, and treatment.

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	Treatment		Economic migrant				Forced migrant			
Category	Attribute	Level	FE Estimate (95% CI)	N	RE Estimate (95% CI)	N	FE Estimate (95% CI)	N	RE Estimate (95% CI)	N
Humanitarian concerns	**Gender**	Male	-0.051 [-0.056,-0.046]	31	-0.057 [-0.063,-0.05]	31	-0.059 [-0.063,-0.055]	31	-0.055 [-0.063,-0.047]	31
		Female	0.049 [0.044,0.054]	33	0.043 [0.037,0.05]	33	0.055 [0.051,0.059]	33	0.06 [0.052,0.068]	33
Economic concerns	**Occupation**	Worker/Farmer	-0.073 [-0.078,-0.069]	32	-0.078 [-0.084,-0.072]	32	-0.018 [-0.023,-0.013]	32	-0.014 [-0.023,-0.006]	32
		Unemployed	-0.152 [-0.164,-0.14]	7	-0.152 [-0.164,-0.139]	7	-0.146 [-0.155,-0.137]	7	-0.142 [-0.153,-0.131]	7
		Professional occupation	0.145 [0.14,0.15]	33	0.152 [0.145,0.158]	33	0.06 [0.056,0.064]	33	0.065 [0.057,0.073]	33
	Language	Unable to speak language	-0.113 [-0.121,-0.105]	18	-0.114 [-0.123,-0.105]	18	-0.11 [-0.115,-0.104]	18	-0.104 [-0.113,-0.096]	18
		Fluent language	0.096 [0.089,0.102]	22	0.097 [0.089,0.105]	22	0.108 [0.103,0.113]	22	0.114 [0.106,0.123]	22
		Broken language	-0.036 [-0.044,-0.027]	17	-0.035 [-0.044,-0.026]	17	-0.002 [-0.008,0.003]	17	0.003 [-0.005,0.012]	17
	Education	University	0.11 [0.101,0.119]	21	0.111 [0.101,0.12]	21	0.05 [0.036,0.064]	21	0.048 [0.032,0.064]	21
		Secondary	-0.068 [-0.08,-0.056]	15	-0.067 [-0.08,-0.054]	15	-0.03 [-0.053,-0.006]	15	-0.037 [-0.062,-0.013]	15
		Primary	-0.136 [-0.154,-0.118]	9	-0.144 [-0.162,-0.125]	9	-0.035 [-0.06,-0.009]	9	-0.043 [-0.069,-0.016]	9
		No education	-0.096 [-0.111,-0.081]	11	-0.099 [-0.115,-0.083]	11	-0.079 [-0.1,-0.057]	11	-0.073 [-0.096,-0.05]	11
Cultural concerns	**Religion**	Muslim	-0.079 [-0.086,-0.072]	34	-0.081 [-0.089,-0.073]	34	-0.074 [-0.079,-0.069]	34	-0.079 [-0.087,-0.071]	34
		Christian	0.074 [0.067,0.082]	29	0.074 [0.065,0.083]	29	0.077 [0.072,0.082]	29	0.079 [0.071,0.088]	29
		Agnostic	0.017 [0.007,0.026]	16	0.012 [0.002,0.022]	16	0.018 [0.013,0.024]	16	0.024 [0.015,0.033]	16
	North south	Global South	-0.017 [-0.021,-0.013]	38	-0.019 [-0.025,-0.013]	38	-0.004 [-0.007,-0.001]	38	0.002 [-0.006,0.009]	38
		Global North	0.026 [0.02,0.032]	38	0.022 [0.015,0.029]	38	0.009 [0.003,0.016]	38	0.015 [0.005,0.024]	38
	Continent	Sub-Saharan Africa	0.005 [-0.004,0.014]	21	0.004 [-0.006,0.014]	21	0.009 [0.001,0.018]	21	0.014 [0.003,0.025]	21
		South Asia	-0.018 [-0.026,-0.01]	19	-0.021 [-0.03,-0.012]	19	-0.012 [-0.018,-0.006]	19	-0.006 [-0.016,0.003]	19
		Middle East and North Africa	-0.024 [-0.032,-0.017]	27	-0.025 [-0.033,-0.016]	27	-0.004 [-0.01,0.002]	27	0.001 [-0.008,0.01]	27
		Europe and Central Asia	0.016 [0.01,0.022]	31	0.011 [0.003,0.018]	31	0.011 [0.005,0.018]	31	0.017 [0.007,0.026]	31
		East Asia and Pacific	-0.035 [-0.045,-0.025]	18	-0.042 [-0.053,-0.032]	18	-0.019 [-0.039,0.001]	18	-0.018 [-0.04,0.003]	18

Table A15: Meta-regression results for Figure 13. Showing results by host country level of development, meta-model, and treatment.

Category	Attribute	Treatment Level	Developed country FE Estimate (95% CI)	N	RE Estimate (95% CI)	N	Developing country FE Estimate (95% CI)	N	RE Estimate (95% CI)	N
Humanitarian concerns	**Gender**	Male	-0.051 [-0.054,-0.049]	31	-0.049 [-0.055,-0.043]	31	-0.042 [-0.051,-0.033]	31	-0.048 [-0.06,-0.036]	31
		Female	0.051 [0.048,0.053]	33	0.053 [0.047,0.058]	33	0.028 [0.02,0.037]	33	0.027 [0.016,0.038]	33
Economic concerns	**Occupation**	Worker/Farmer	-0.049 [-0.052,-0.046]	32	-0.05 [-0.056,-0.044]	32	0.006 [-0.003,0.016]	32	0.006 [-0.005,0.018]	32
		Professional occupation	0.093 [0.091,0.096]	33	0.097 [0.091,0.103]	33	0 [-0.013,0.013]	33	0.007 [-0.008,0.022]	33
Cultural concerns	**Religion**	Muslim	-0.084 [-0.088,-0.08]	34	-0.088 [-0.094,-0.081]	34	-0.035 [-0.044,-0.026]	34	-0.037 [-0.049,-0.025]	34
		Christian	0.075 [0.071,0.079]	29	0.077 [0.07,0.083]	29	0.071 [0.058,0.083]	29	0.075 [0.061,0.089]	29

## C   Funnel Plots for Main Meta-Analyses

Figure A3: Funnel Plots
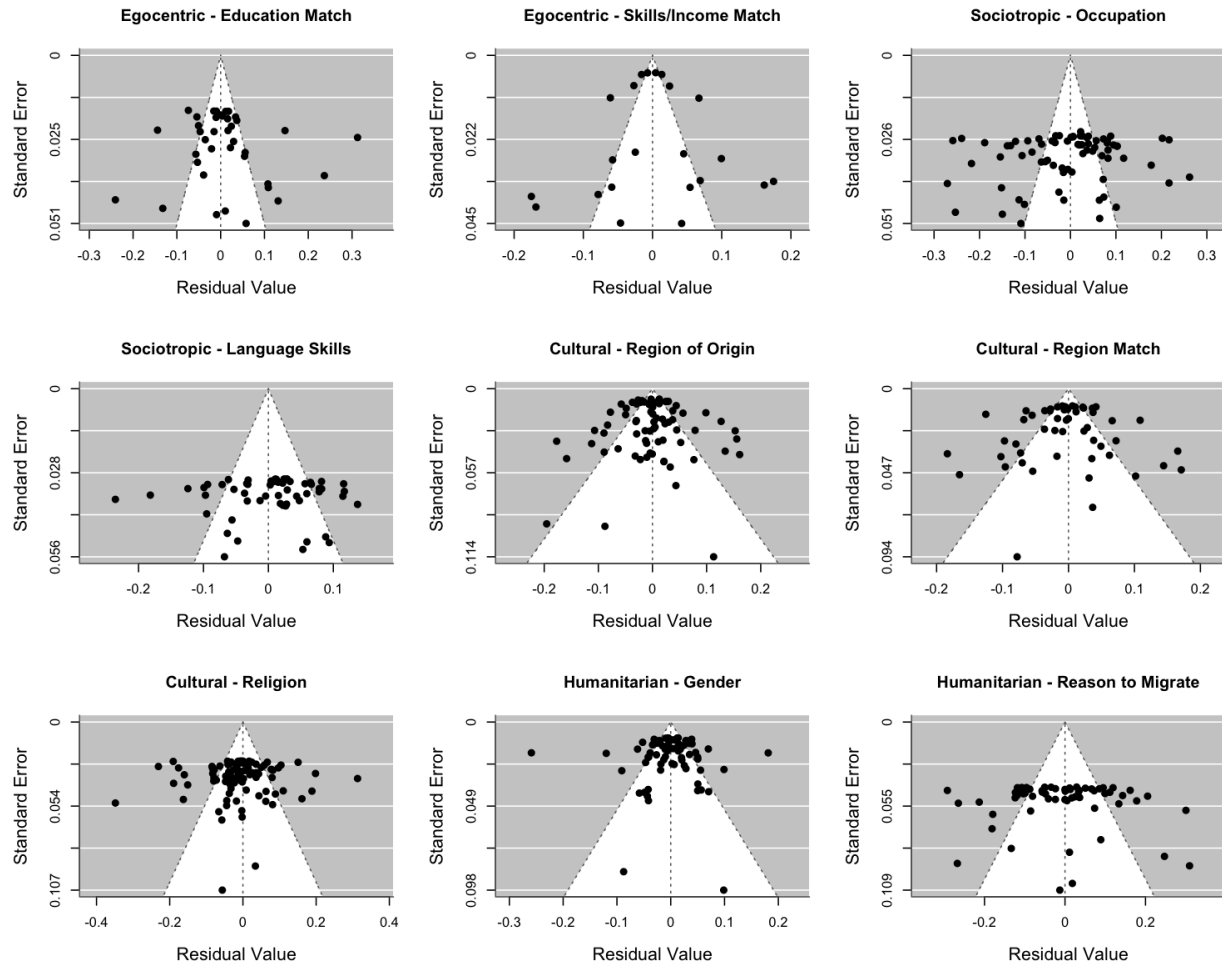
Notes: Funnel plots for residuals from main meta-regression models (random-effects specification). Residuals shown as solid points centered around zero. (Pseudo) 95% confidence regions shown as white triangles.

D   Further Results from Additional Meta-Analyses

D.1   Findings from All Attributes

Figure A4: Results for All Migrant Attributes
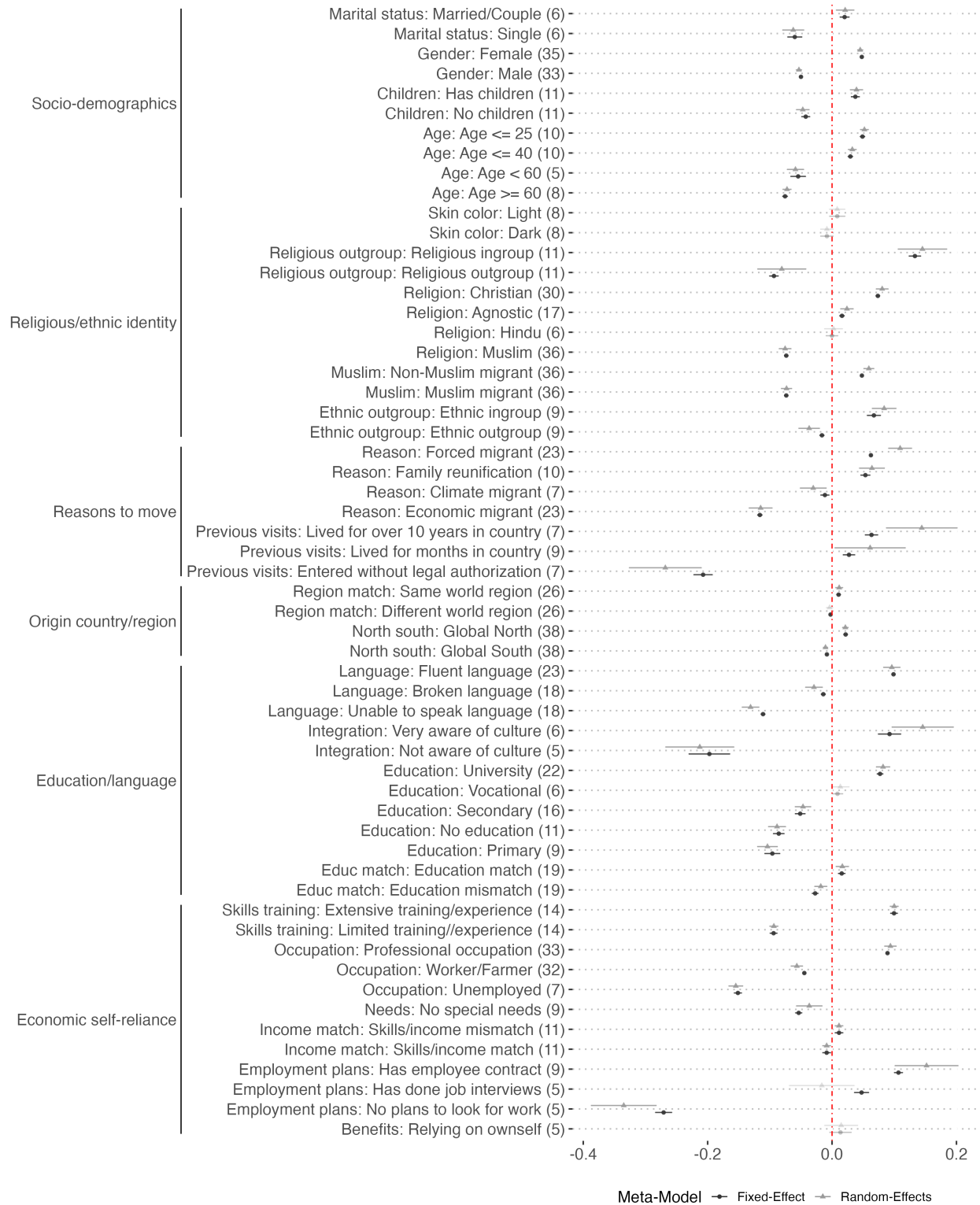
Notes: Results for all migrant attributes on positive attitudes towards migrants in the study context. Attributes with less than five studies using them are omitted from any meta-analysis. Country attributes are omitted from the plot due to limited substantive comparability across studies.

Figure A5 displays the individual and meta-effects of migrants' skill levels on positive attitudes towards migrants. It provides additional evidence showing that sociotropic concerns shape migrant attitudes. Focusing on a binary distinction between high- and low skilled migrants, we find systematic evidence that respondents prefer the former.

Figure A5: Sociotopic Concerns: Migrant Skill Levels
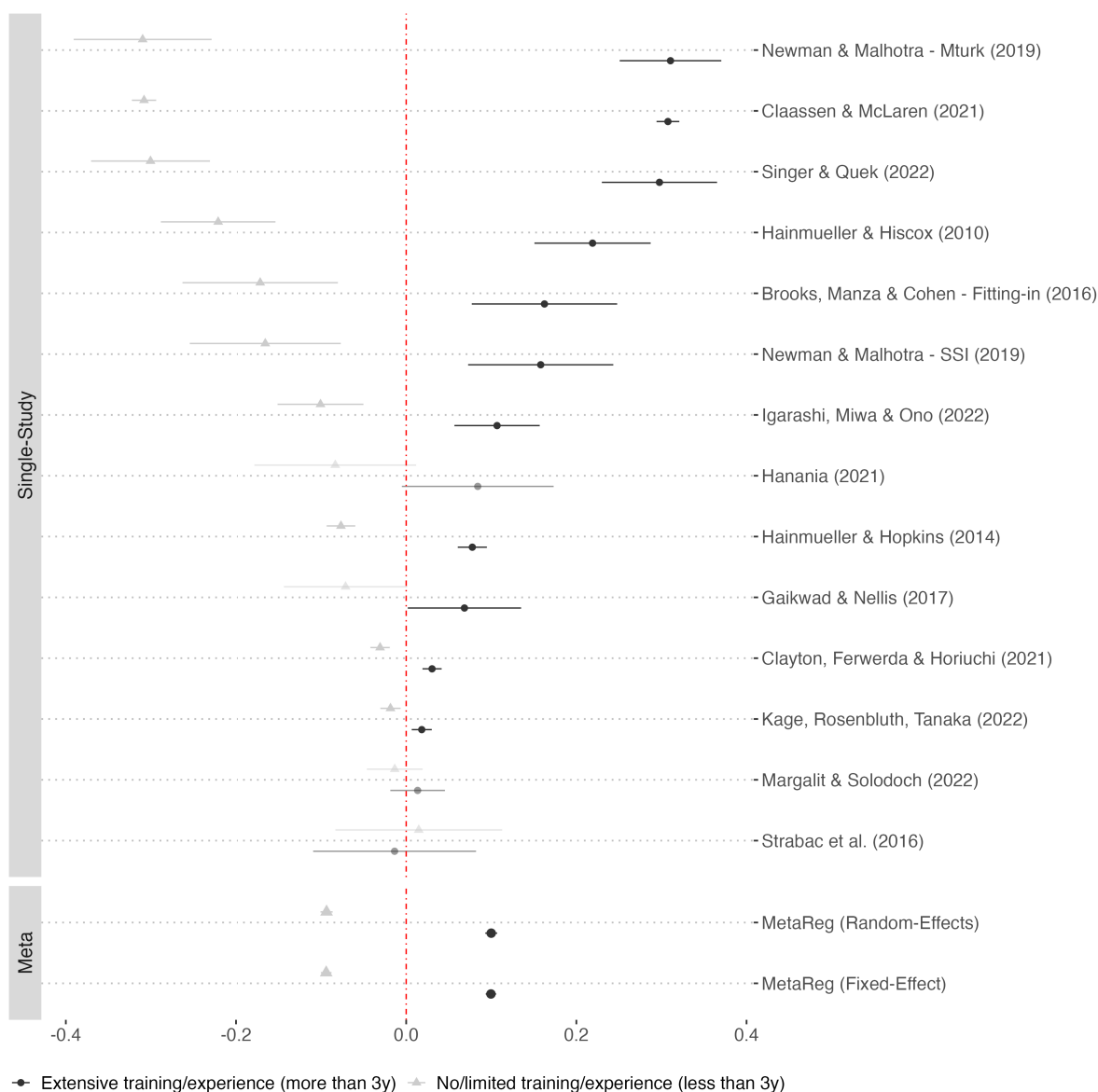
Notes: The effect of migrant's skill levels on positive attitudes towards migrants. High skill level is defined as having more than 3 years of experience, education or training. Individual estimates and meta-estimates on standardized outcomes. Meta analyses based on 14 studies.

Figure A6 displays the analogous effects of migrants' religion on positive attitudes by the main religion in a given study context.

Figure A6: Cultural concerns: Migrant's Religion
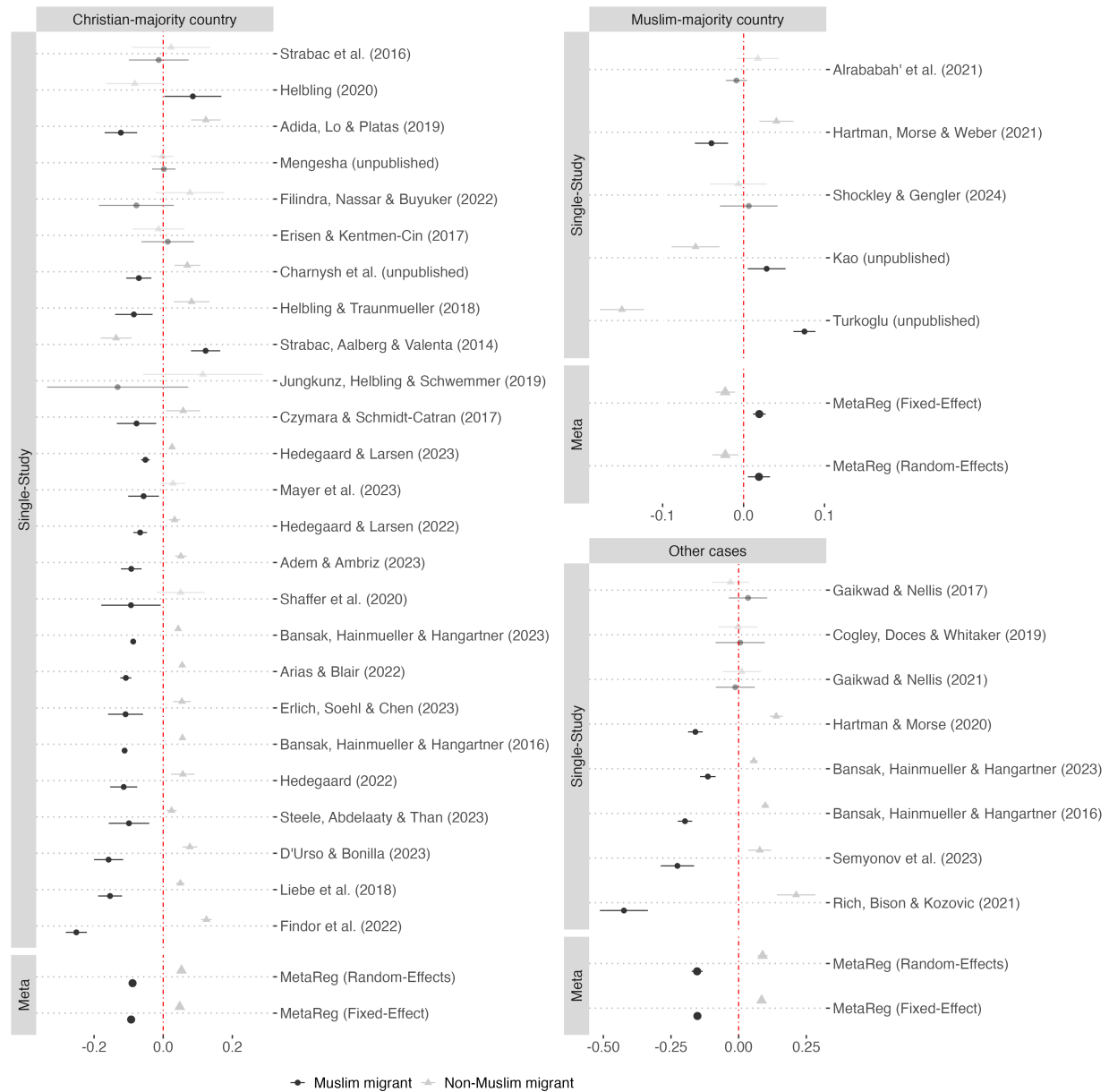
Notes: The effect of migrant's s religion on positive attitudes towards migrants by dominant religion in the study context. Individual estimates and meta-estimates on standardized outcomes.

D.3 Findings by Different Outcomes

Table A16 shows that the most common outcome by far in all studies is the admission to the country. Figure A7 displays whether the effect estimates differ for the most common outcome in comparison to all other outcomes.

Table A16: Breakdown of outcomes used across studies in the meta-analysis

Outcome	N (Studies)	Percentage (Studies)
Admission	30	36.59
Increasing migration	9	10.98
General attitudes index	7	8.54
Citizenship	6	7.32
Hosting	6	7.32
Neighbor preference	6	7.32
Permanent residence	6	7.32
Feeling thermometer	4	4.88
Donation	3	3.66
Perceived legality	2	2.44
Hiring	1	1.22
Responsiveness	1	1.22
Welfare access	1	1.22
Work permit	1	1.22

Figure A7: Effect of Migrant Attributes, by Outcome Type
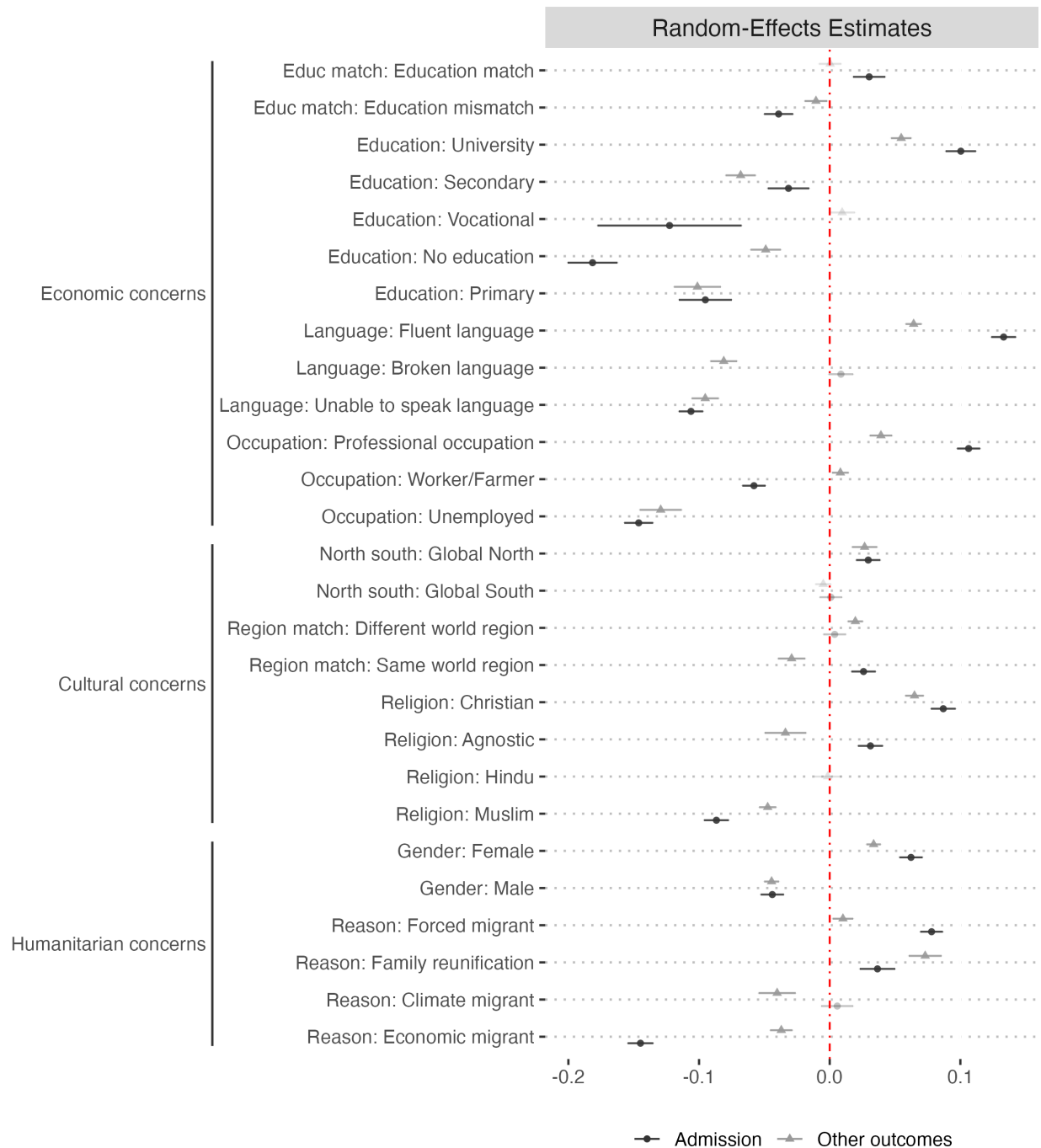
Notes: The effect of migrant attributes, by outcome type. Distinction between most common outcome (admission) and any other outcome.

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