IT TOOLS AND METHODS FOR MANAGING MIGRATION FLOWS

Meta-Analysis of micro and macro level factors affecting attitudes to immigration

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Executive Summary

Public opinion about immigration has attracted much scholarly interest and fueled extensive empirical research in recent years. Many different hypotheses have been tested to explain individual and contextual differences in immigration attitudes. The result has been a multitude of often conflicting empirical findings. Thus, providing a consistent overview of the scientific evidence on which factors affect individual attitudes to immigration has become a challenge.

The present report contributes to systematising recent empirical findings on public attitudes towards immigrants, in order to establish the foundations of the EUMigraTool Tension Function. We conduct a global, multi-disciplinary meta-analysis of 2096 effect sizes from 140 academic articles published in top-ranked, peer-reviewed academic journals in the fields of economics, political science, sociology, psychology and migration/ethnic/demography studies in the past decade (2009-2019). There are roughly 150 different types of attitudes to immigration and immigrants included in the scholarly literature, ranging from attitudes and policy preferences towards integration, personal feelings about immigrants, to prejudice and trust towards immigrants. Since parts of the spectrum of attitudes are not comparable, we cannot combine all of the categories into a single analysis. Therefore, we concentrate on two broad categories that we identify as the most frequent and most relevant below – policy preferences regarding the level of immigration into the country and the contribution of immigrants to society. These are also the two attitudes most relevant for the development of the EUMigraTool as they bring the most potential policy consequences.

Our findings show which individual and contextual characteristics most often included in empirical models consistently explain attitudes towards immigrants. We structure the empirical results of 140 recent academic articles and 220 analyses included in those articles. We find that (*a*) explaining differences in individual attitudes to immigration by contextual (regional-, country-level) factors is much less common than by individual-level factors which might be also due to the fact that many studies are country-specific rather than relying on cross-

country comparisons and thus cannot draw conclusions regarding cross-country differences in attitudes to immigration, (*b*) some determinants of attitudes to immigration matter only for certain dimensions of these attitudes (for instance, respondents' type of occupation is much more relevant for their attitudes regarding migration policy than for their assessments of immigrants' contribution to society), and (*c*) among the frequently used determinants of attitudes towards migration the most consistently relevant ones are education, interpersonal trust, social class, economic satisfaction, political views, and contact with minorities.

By providing a comprehensive assessment of the most influential micro and macro-level factors affecting views about immigration, our work will help researchers, policy-makers, and practitioners identify the potential risks of tensions between migrants and citizens, which is one of the two functionalities of the EUMigraTool (EMT). We discuss the implications of these patterns.

Keywords: attitudes to immigration, meta-analysis, public opinion, integration, migration, intergroup attitudes

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Abbreviations

CEPS: Centre for European Policy Studies

ESS: European Social Survey

EVS: European Value Survey

EMT: EUMigraTool

EUI: European University Institute

GDP: Gross Domestic Product

IfW: Institut für Weltwirtschaft

JIF: Journal Impact Factor

SJR: SCImago Journal Ranking

UAB: Universitat Autònoma de Barcelona

WVS: World Value Survey

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1. Introduction

Attitudes to immigration are becoming part of a new political cleavage in many Western countries (Kriesi et al. 2012; Hobolt 2016), particularly in the aftermath of the so-called "migration crisis". While increasing proportions of immigrants in Western societies are viewed positively by some, stressing the benefits of immigration, others view these demographic changes with suspicion. Consequently, explaining the reasons for individual differences in attitudes to immigration has also attracted increased scholarly interest. Many hypotheses regarding factors affecting attitudes to immigration have been proposed, which can make it sometimes difficult to see what factors are indeed important in explaining immigration attitudes. Meta-analyses are essential to clear up this forest by formally structuring and summarising the scholarly state-of-the-art on the topic. They also play a crucial role in explaining the origins of the heterogeneity of research results to academics who are non-experts in the field, policymakers, and practitioners.

In this report we help systemise knowledge across various social sciences regarding attitudes to immigration. For this, we cover the respective thirty top-ranked journals in economics, political science, sociology, psychology, and migration/ethnic/demographic studies between 2009 to 2019. As our work began in May 2020 when some journals were still preparing their first 2020 issue, we decided to use a clear cutoff and cover all studies published until the end of 2019. From these, we selected all articles that quantitatively analyse the determinants of attitudes to immigration. In total, we evaluate information from 140 academic articles and 2096 estimates.

We ask two research questions: (1) What are the typical approaches scientists in different social sciences take when analysing attitudes to immigration, and how do these differ across fields, and (2) within the broad social science literature, which individual and contextual indicators are consistently found to influence attitudes to immigration? Our contribution is twofold. Firstly, our review encompasses the literature from several disciplines (e.g., economics, political science, sociology, psychology to ethnic studies, migration studies, and demography) and provides

insights into how analysis of attitudes to immigration differs among disciplines. First, we show that there is vast heterogeneity in the empirical literature (we encountered about 150 different types of attitudes to immigration while conducting this meta-analysis). Second, we document that the two most frequent and important types of outcome variables capture attitudes towards migration policy (e.g., preferred levels of immigration) and attitudes about immigrants' contribution (e.g., to society or their impact on the economy). Third, we demonstrate that while the statistical models used are widely shared across the social sciences, the general approach to empirical studies varies considerably as disciplines differ on the sources of identification of effects, sample sizes and structures of empirical models. Fourth, many studies do not provide sufficient information to construct p-values,[1] although its importance to judge correlation between independent and dependent variables.

Secondly, given recent international developments, epitomised by Donald Trump's election and the Brexit vote in 2016, empirical research regarding attitudes to immigration has flourished in recent years, with new datasets and waves of cross-country longitudinal surveys being released (e.g., the European Social Survey (ESS), European Value Study (EVS) and the World Value Survey (WVS)). These new data allowed researchers to test new theories and hypotheses that could, for the first time, be assessed empirically.[2] We cover these recent developments in the literature.

There are already helpful review papers discussing factors affecting attitudes to immigration that deserve praise (Ceobanu and Escandell 2010; Hainmueller and Hopkins 2014). However, these are not meta-analyses. We complement these review papers with our meta-analysis by providing a quantitative overview. Recently, there have also been meta-analyses conducted concerning attitudes to

[1] P-value is used in statistical models to provide the smallest level of significance at which the null hypothesis would be rejected.

[2] For instance, Pardos-Prado and Xena (2019) propose a theory regarding individuals with low transferable skills in the labor market articulating a subjective sense of job insecurity and consequently higher hostility toward migrants. On the other hand, Aarøe et al. (2017) hypothesize that individuals high in behavioral immune sensitivity are more opposed to immigration.

immigration (Pottie-Sherman and Wilkes 2017; Kaufmann and Goodwin 2018). Nevertheless, their focus has been different. While both papers analyse attitudes to immigration as the dependent variable, they focus only on the effect of ethnic diversity (Kaufmann and Goodwin 2018) and group size (Pottie-Sherman and Wilkes 2017) on these attitudes. In contrast, our meta-analysis is concerned with identifying what indicators are most frequently used in quantitative studies in top social science journals to explain individual attitudes to immigration, instead of concentrating on solely one explanatory factor. Moreover, **the ultimate goal is to identify what individual and contextual indicators are consistently found to influence individual attitudes to immigration**.

This goal is directly relevant to other tasks in WP5. Our meta-analysis identifies the relevant factors affecting attitudes to immigration *globally* and is based on statistically representative samples from all over the world. It informs task T5.2, which will empirically test, using available survey data, whether the findings from our meta-analysis are directly relevant for the European context. Task T5.2 and deliverable D5.2 provide an original contribution by testing whether factors identified globally as the most important in affecting individual attitudes to immigration also apply specifically to the European context. Similarly, task T5.3 will be also informed by our meta-analysis, as it will help to identify individual level characteristics that might be of relevance for hate speech detection.

We provide and encompassing review of the research regarding attitudes to immigration that was published during the past decarde across different social science fields. Out of the 150 different types of attitudes to immigration that we have encountered in the literature, we focus our meta-analysis on those reflecting preferences towards migration policy (e.g., preferred levels of immigration) and views about immigrants' contribution to society. Our approach focuses on two main types of factors affecting these attitudes. The first type is individual-level indicators such as age, gender, education, left-right positioning on the political spectrum. The second approach is to look at macro-level indicators such as GDP per capita, the share of the population that is unemployed, or the share of immigrants in the country. We aim to assess recent empirical evidence on which of

these individual and contextual level factors are consistently (positively or negatively) linked with attitudes to immigration.

A key result of our meta-analysis is that drivers of attitudes to immigration, such as occupation and income, seem to matter much more consistently for attitudes towards migration policy than for attitudes regarding immigrants´ contribution to society. Moreover, our results indicate that education, interpersonal trust, social class, economic satisfaction, political views, and contact with minorities are relatively more statistically significant than other drivers often associated with public opinion to immigration, such as age and gender. These findings provide an original and insightful perspective on attitudes to immigration with implications for both researchers and policymakers.

The next section of the report presents the research strategy and the sample of quantitative studies used in the meta-analysis. We then analyse and identify the differences between social science disciplines and their approaches to studying attitudes to immigration. In the subsequent section, we systematically describe and analyse the individual and contextual factors most frequently used in these quantitative analyses to explain attitudes to immigration. We conclude the paper by summarising the lessons learned and discuss some opportunities for further research.

2. Data and methods

Results and conclusions of a meta-analysis can be influenced by the selection of studies included (Van Ham and Smets 2014): a meta-analysis can cover all studies, a representative sample of studies, only studies of high quality, or only the most comparable studies. Including all available studies would be, of course, preferable. That would avoid one of the most prominent sources of bias when conducting a meta-analysis, the so-called file-drawer problem (Begg 1994; Rosenthal 1991). Since significant results are most likely to get published, relying only on published studies can inflate the number of studies with statistically significant results (Coursol and Wagner 1986; Glass et al. 1981; Rotton et al. 1995; Brodeur et al. 2016). However, including also unpublished work is often impossible because non-significant or unexpected results frequently do not make it into publicly available pre-prints. In practice, most meta-analyses therefore disregard the file-drawer problem and focus exclusively on published works. Such studies then often use a Bayesian perspective when interpreting the results of the analyses they cover, e.g., treating the observed effect sizes or p-values as the outcome of a censored distribution where censoring has resulted from the publication process (Kasy 2021). Therefore, we opted to include only those studies that can be considered high quality by being published in top-ranked academic journals across the most relevant social science disciplines.

2.1 Selection of journals

This meta-analysis aims, not to select all studies or a representative selection of all studies, but rather the 'best' studies. Published work in top-ranked journals has gone through rigorous peer review and is therefore thought to be of high quality and to report more reliable results. As a measure of the quality of a journal, we used different rankings, namely the Journal Impact Factor (JIF) by Clarivate, the SCImago Journal Ranking (SJR), and the Google Scholar ranking, which are those most often provided by academic publishers hosting these journals.

While the JIF is calculated by the ratio of a journal's received citations by a count of its published articles, the SJR accounts for both the number of citations of the articles in a journal as well as the citing journal's quality. The Google Scholar

ranking, on the other hand, is based on the h-index, and therefore on the number of citations as well as the impact of the respective authors. We combined all three rankings as we believe, given the rankings' different methodology, their combination provides a more objective picture of the journal's quality than if we would rely only on one of them.

We are aware that all these rankings have their specific drawbacks and might not be an optimal representation of the quality of a journal. They are, for example, prone to manipulation (Fong 2017) and not easily comparable across disciplines (Dorta-González and Dorta-González 2013). However, there are no other readily available metrics that can be used to judge journal quality across disciplines. Thus, we decided to use journal rankings as the most objective measure of the quality of the journals.

We used the top 30 journals from the JIF ranking and the top 20 journals from the Google scholar ranking[3] for each discipline. We then excluded journals that are not from the specific field of interest (such as journals included in the ranking of journals in the field of economics but with a specific and explicit focus on a sub-field of the discipline, e.g., business studies or finance) as well as an overview, review, methodological and theoretical journals. We replaced the missing space on the "Top30 list" with journals from the list of the top journals of the SJR index.

2.1.1 Journal selection procedure for Ethnic studies/Migration studies/Demography

Migration studies, ethnic studies, and demography are highly specialised disciplines with few outlets and published papers per year. To maintain the comparability of the quality of the journals with the other four larger disciplines, we only included the ten top-ranked journals from each of these fields.

For human migration/migration studies and ethnic studies, we relied on the Top 20 Google scholar ranking (human migration) and the JIF ranking (ethnic studies)

[3] Google scholar ranking is only provided for the top 20 journals of each discipline.

as each of the rankings had only one of the fields listed. As both rankings essentially overlap, we merged them and then selected the top 20 journals. We gave preference to journals listed in both rankings. After journals present in both rankings were selected, we gave preference to the Google Scholar ranking and those journals focusing more broadly on migration than on ethnic studies.

Finally, we selected ten demography journals based on the SJR Ranking and JIF ranking (since Google Scholar does not have a demography ranking). We then excluded journals that are not from the specific discipline and overview, review, methodological and theoretical journals. Some of the JIF ranking's journals were present both in the ethnic studies and the demography ranking. In such cases, they were then excluded from the demography ranking. We filled up the missing space on the "Top30-list" with journals from the list of the top journals of the SJR index. As the last step, we merged the list of the ten demography rankings with the twenty journals from migration studies and ethnic studies.
The full list of journals included for each discipline can be found in Table 6 in the Appendix.

2.2 Selection of studies

To select articles[4] for the meta-analysis, we follow the guidelines of the Cochrane protocol (Higgins and Green 2008) and especially of Dinesen et al. (2019) in identifying the population of studies. Our selection is based on several inclusion criteria.

Attitudes to immigration are a vast research field, that the cross-discipline literature that we survey in this meta-analysis approaches in several distinct ways. To identify potential articles of interest, we applied the following criteria;

(1) The study must be published in one of the selected top 30 academic journals of the respective disciplines.

The selection process of these journals is described in the previous section.

[4] In the rest of the paper, we use the words “article” and “study” interchangeably

(2) The study has to be published in English.

Given that all of the highly ranked journals are English-language journals, this criterion is self-evident. Nonetheless, we acknowledge that this design might bring some bias into the analysis. Firstly, the geographical coverage of the studies might be skewed, as research published in leading journals regarding attitudes to immigration is largely U.S.- or Western Europe-based (Gonnot et al. 2020; Wilson and Knutsen 2020). Moreover, the opportunity structure available to social scientists around the globe is somewhat skewed and not all authors have the resources and opportunities to publish English language studies in top-ranked journals (Jacobs and Mizrachi 2020). In the future, it could be useful for cross-continental teams to conduct a meta-analysis of studies on attitudes to immigration in global (all language) publishing. Nevertheless, this task would require substantially more effort, resources and a much longer timeframe.

(3) The study must be published between the years 2009 – 2019.

The ten-year timeframe we chose for our meta-analysis may be underwhelming for some readers because it excludes some older, influential papers. We chose such timeframe because we wanted to document the recent developments in the field when the attitudes towards migration literature increased vastly across the social sciences. It is worth mentioning that the fact that we arenot including articles published after 2019 does not allow us to include the very recent papers. This is due to the fact that our work on selecting the relevant papers started in mid-2020. Thus, 2019 was the most recent concluded year of publications. Otherwise, once we selected the relevant articles until 2019 and followed with the next steps which required additional time, we would have to start the procedure once again as new articles of our interest might have come out meanwhile. This would lead to not being able to move forward as we would continuously need to update our meta-analysis each month.

We scraped the selected peer-reviewed journals using the keywords "immigrant" or "immigration" for the selected timeframe. The identification process was carried out by two independent coders based on the additional criteria listed below. If both coders identified the same article, we included the article in our

dataset. In case of a disagreement between the coders, a third coder made the decision.

2.3 Selection of analyses

It should be noted that an academic study (or article) may contain more than one analysis. This happens, for instance, when one article analyses data from several samples in different countries separately. Thus, one academic article can provide information about factors affecting attitudes to immigration in different contexts, which are then included in our meta-analysis as separate analyses. At the same time, a sample may be common to several articles. This is especially true of large-scale survey data such as the European Social Survey, the World Value Survey, or the European Value Study. However, articles using the same sample are still included as separate studies in our analysis, although they usually use different operationalisation, and may differ in their choice of countries. Finally, one academic article may, using the same sample, perform an analysis for different dependent variables. In this case, we include all these analyses separately.

As a result, within a single study, some analyses were included while others were not based on the following selection criteria:

(4) We included quantitative analyses only.

To be able to use quantitative meta-analysis techniques, we need to obtain point estimates and statistical indicators that are readily available. This is necessary because conducting a meta-analysis requires information about both the magnitude and the statistical significance of the effects measured in the study.

(5) We are interested in individual attitudes toward immigration and therefore use individuals as the unit of observation.

Analyses measuring attitudes at the aggregate level (such as attitudes to immigration at the level of cities, regions, political parties) are not included.[5] This

[5] In the majority of cases, the effect of the independent variables on the dependent variable are constructed from individual answers of the respondents. However, there is also an indirect way

ensures consistency of the meta-analysis and comparability across the different analyses.

(6) *Analyses must measure how respondents' individual characteristics and circumstances affect their attitudes to immigration, not how immigrants' characteristics affect respondents' attitudes*.[6]

Our objective is to contribute to the mapping of attitudes to immigration based on receiving populations' characteristics, which will be later shown through the EMT of ITFLOWS. While analyses looking at differences in attitudes to immigration based on migrant populations' characteristics have their own merit and are also clearly necessary, the two approaches cannot be accommodated in a single meta-analysis. It is also noteworthy that much less research has been conducted with the latter approach.

(7) *The analyses included in the meta-analysis must contain information about factors affecting the variation in individual attitudes to immigration. Nonetheless, the principal focus of the analysis does not need to be attitudes to immigration.*[7]

Our work is highly inclusive, and we attempt to provide a comprehensive overview of the disciplines and journals that contribute to the understanding of attitudes to immigration. Excluding articles that satisfy all of the above criteria, but do not primarily focus on attitudes towards immigration in their research question, would create unnecessary discrimination within the literature and significantly reduce the number of analyses and observations. Instead, our inclusive approach allows for a more comprehensive meta-analysis of scholarly work on attitudes to immigration. By focusing on studies published in top-ranked peer-reviewed journals, we also ensure the general quality of our dataset.

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how the dependent variable can affect attitudes to immigration. This is when individual answers are aggregated into a group mean. Nevertheless, for our purposes, we only compare dependent variables constructed from individual answers.

[6] In other words, we do not compare how the characteristics of immigrants (for instance, whether they are from a certain ethnic or religious group) affect the willingness of respondents to accept them compared to immigrants from another (ethnic/religious/…) group.

[7] To put it bluntly, a study whose principal research question and hypothesis does not focus on explaining attitudes to immigration, but still provides empirical results for factors affecting attitudes to immigration (for instance, as a pre-analysis to the main results) is still included.

Finally, it is worth stressing that some studies present more than one model per analysis, with each model including additional variables and/or conducting additional robustness tests on the same data. In such cases, there is a risk that incorporating multiple specifications of the same fundamental analysis means the meta-analysis is not conducted on independent analyses. Results may then be driven by those papers that conduct more robustness checks since these provide more observations for the meta-analysis. This would bias the results, especially across social science disciplines that differ in their methodological standards. Therefore, we have only included the most inclusive model (i.e., the one where all variables of our interest are included) to maintain the independence of observations.[8] On the other hand, certain articles conduct several analyses based on different data. For example, they conduct a separate analysis for two countries based on two country-specific surveys. In these cases, both models have been included in the meta-analytical review as the independence of models is preserved.

2.4 Selection of dependent variables

(8) The dependent variable can refer to immigrants as a general category, irregular immigrants, refugees, or asylum seekers, or migrants with a specific ethnic, religious, and cultural background.

In the initial stage of our research, we select all the dependent variables based on a loose definition of attitudes to immigration, from emotions felt towards immigrants to the perception of the consequences of immigration and preferences towards immigration policy. Our task is to provide a comprehensive overview of the disciplines and journals that contribute to understanding attitudes to immigration. Therefore, the first stage of our dependent variables selection process consists of mapping scientific contributions to the topic that are supported by quantitative analysis and have been recently published in high-ranked peer-reviewed journals in their respective field. To be included, the dependent variable's wording of the question must include a mention of "immigrants," "foreign-born," "refugees" and other generic denominations for migrants.

[8] Sometimes, an independent variable is, however, included in a model with all variables of interest, but also in a more restrictive model. In these cases, we noted whether the effect of the single variable is in the same direction and has the same statistical significance as in the restrictive model.

(9) The dependent variable must measure attitudes to immigration directly and express positive or negative opinions (as opposed to neutral statements towards immigrants or neutral policy preferences).

The outcome variables considered in this meta-analysis are selected according to the survey instrument (i.e., question(s)/indicator(s)) used to measure them rather than according to the name with which the respective papers' authors use. We base the selection on the survey instrument because many researchers apply different and unique names to the same indicators measuring attitudes to immigration (for instance, anti-immigration sentiment, opposition to immigration, ethnocentrism, and opposition to foreigners).

(10) When attitudes to immigration are measured through an index or an aggregate of several indicators, the analysis is included only if the dependent variable includes all or a majority of attitudinal indicators directly related to immigration as defined in the previous item.

Sometimes researchers construct indices as a dimension-reduction technique, for example, additive indexes that combine questions referring to immigrants and other minorities. As our focus is strictly on attitudes towards immigrants. Including also attitudes to ethnic and religious minorities, although often correlated with attitudes to immigration, but who might be present in the receiving country for generations, could distort our analysis and lies outside the scope of this meta-analysis.[9]

(11) The dependent variable must be directly interpretable as a measure of attitudes.

Sometimes researchers measure attitudes to immigration by a proxy, such as by voting choice or party affiliation with anti-immigrant parties. We exclude such analyses from our meta-analysis. Often these dependent variables reflect and measure a series of attitudes and behaviours and not only attitudes to

[9] For instance, if a dependent variable measured as an index is composed of three questions and two of those are with regard to immigrants, but the third question asks about attitudes towards other minorities such as Muslims, blacks, we still included the dependent variable in our study. On the contrary, if the dependent variable is composed of only one question about immigrants and two about minorities, we excluded it.

immigration. The interpretation of this indirect measure of attitudes to immigration could thus be very skewed.

2.4.1 Selection of relevant dependent variables

Our initial inclusion criteria result in around 150 different types of attitudes to immigration that are used in the literature. For simplicity, we have grouped analyses into the following 10 higher-ordered groups of dependent variables based on the dependent variable they use:

- Attitudes and policy preferences on integration issues (rights and opportunities)
- Attitudes and policy preferences on cultural issues
- Concerns and feelings towards immigrants
- Contribution and consequences of immigration (e.g., economic, cultural, social, political)
- Attitudes and policy preferences on refugees/asylum seekers management issues (e.g., border management, support, management of flows)
- Attitudes and policy preferences on immigration flows and level
- Individual behavior towards immigrants (e.g., financial support, social distance, assisting in arresting immigrants)
- A mix of attitudes to immigrants (indistinct)
- Prejudice and trust towards immigrants

A list of all dependent variables can be found in the Appendix in Table 7.

Many of the dependent variables covered above are not comparable to each other. Combining these dependent variables in a single analysis would result in such a high degree of heterogeneity that a quantitative analysis of their determinants would not yield useful results. Instead, we chose the two groups of dependent variables that are the most relevant and have the greatest number of analyses: "a*ttitudes and policy preferences on immigration flows and level*" and "*contribution and consequences of immigration (e.g., economic, cultural, social, political)"*.

Furthermore, these two groups of dependent variables complement each other as the first one mostly deals with attitudes capturing preferences for the future, whereas the second one with the present effects of immigration on society.

The first group on *"immigration flows and level*" includes attitudes such as allow more or less (labour, irregular, etc.) immigrants into the country. In practice, these are usually questions asking respondents to clarify whether they believe their country should allow more or less (e.g., unskilled, labour, Muslim, Jewish) immigrants to come to the country. This concept engages with policy debates about levels of immigration and entry criteria, such as debates about the introduction of points systems that privilege potential migrants with higher skills.[10]

The second group of analyses on the "c*ontribution and consequences of immigration (e.g., economic, cultural, social, political)"* includes mostly attitudes regarding the ex-post assessment of immigration's impact on society, and whether immigration is beneficial to the community, e.g., in terms of economy or culture*)"*. Examples of such attitudes can be found in Table 7 in the Appendix.

Our focus on these two groups of dependent variables leaves us with a total of 872 analyses.[11]

2.5 Sample selection

(12) At the initial stage, we do not impose any demographic, geographic, ethnic, or other restrictions based on respondents' individual characteristics.

Our goal is to provide a comprehensive assessment of individual drivers of attitudes to immigration, which means we do not a priori exclude any analyses

[10] Qualifications for entry can also be conceptualized as varying according to acquired and ascribed immigration criteria. Acquired immigration criteria consist of those individual competencies and attitudes (such as commitment to the way of life of the destination country) that, in principle, immigrants could attain if they wished. Ascribed immigration criteria, in turn, are categorical qualities related to inherent, collective characteristics of a social category, such as being of a certain race. This distinction between ascribed and acquired characteristics mirrors the classic distinction made in the literature between ethnic and civic conceptions of the nation.

[11] Note our terminology. An academic article may include an analysis of a sample from one country Y at time t and another analysis from another country Z at time *t*, or even time *x*. These would then be two separate samples as well as two separate analyses. On the other hand, it should also be noted that an analysis using, for instance, multiple waves of the European Social Survey with multiple countries but controlling for countries and time would be considered to be only one sample and one analysis. However, researchers may also analyze different dependent variables using the same data. In this case, if both dependent variables would be of interest, we would include both results as two separate analyses.

based on the background characteristics of individuals in the sample. For instance, respondents' religious backgrounds or minority status played no part in our inclusion decision.

(13) We select samples based on their external validity, which we define as the extent to which attitudes of individuals in the sample are representative of a given population group and can serve as a meaningful basis for the analysis of attitudes towards immigration.

We do not restrict the meta-analysis only to samples drawn from large-scale surveys because this would unnecessarily limit the number of analyses we could utilise and clash with our comprehensive approach. Besides large-scale surveys, we also include small-sample analyses and experiments, when those contain explicitly (i.e., mentioned by the authors) a measure of representativeness that allows interpreting the results as reflecting attitudes of a specific group of people.

For instance, we included a sample representative of students' attitudes to immigration in Germany: "*The findings so far are based on samples of psychology students at the University of Hagen, a distance learning university characterized by high diversity with respect to students' age, political attitudes, family status, and occupation. University of Hagen students live all across Germany. About 80% are working or self-employed during their studies. These sample characteristics allow us to assume higher generalizability of our findings compared to traditional student samples. Nevertheless, our participants were not representative of the German population*" (Landmann et al., 2019, p. 1412). We keep track of respondents' characteristics from such samples in our dataset to check whether our results are sensitive to the inclusion of certain idiosyncratic population groups.
We excluded samples that lacked information on representativeness: *"Participants were 165 students who participated as partial fulfillment of a psychology course requirement"* (Brase et al., 2018, p. 154).

When an analysis consists of an experiment with treated subjects that were incentivised, nudged, or framed in some way, we always use attitudes to immigration as measured in the pre-treatment period to maintain comparability with other analyses.

2.6 Selection of independent variables

We select independent variables using a different method from the one employed for the selection of the dependent variables. In particular, we do not collect information about all independent variables used in each of the analyses.

Preliminary research in political science based on 23 journal articles reveals that only a handful of independent variables are consistently included in studies addressing attitudes to immigration. Out of the 115 independent variables included in these articles, only age and gender were found in more than half of the studies (Dražanová 2020). This shows that there is little agreement between researchers on which independent variables should be included. Therefore, the majority of independent variables offer little potential for our meta-analysis, as they will occur in too few analyses. As suggested by several reviews of scholarly work on public opinion to immigration such as Ceobanu and Escandell (2010), Hainmueller and Hopkins (2014), or Dennison and Dražanová (2018), we, therefore, focus on the literature's most widely used determinants of attitudes to immigration. These drivers can be split into two categories. The first category includes personal characteristics and values, such as age, educational attainment, gender, or political preferences. The second category is 'contextual' drivers, i.e., factors that relate to the broader context in which individuals are situated, such as the local share of the migrant population or the national unemployment rate. Table 1 lists all the independent variables included in our meta-analysis.

Table 1. List of independent variables selected for the meta-analysis

Individual-level independent variables	Explanation
Age	Age measured in years or in decades; cohorts
Education	Years spent in education; highest degree obtained
Gender	Gender of the respondent
Residence	Does the individual live in a rural or urban area?

Minority status	Measured as a self-reported ethnic minority, or migration background
Income	Annual/monthly personal/household income
Employment status	Being (un)employed
Social Class (subjective)	Individuals' self-reported social class
Occupational status	Based on the skill intensity of an individual's job
Economic satisfaction (individual)	Individuals' economic satisfaction regarding their own or their household's financial situation
Economic satisfaction (national)	Individuals' assessment of their country's economic situation
Religiosity	Measured as the self-declared level of religiosity or religious-service attendance
Left-right positioning (subjective)	Individuals' self-reported positioning on the left-right political axis
Ideology	Based on individuals' stance on political issues
Contact with minority	Measured as the frequency of individuals' contact with ethnic minorities or immigrants
Interpersonal Trust	Respondent´s opinion whether other people can be trusted or he/she shall be cautious when dealing with others
Contextual-level independent variables	
Local GDP per capita	Measured at any sub-national scale (e.g., county, region)

Local minority share	Including the share of immigrants, foreign-born, refugees, ethnic or religious minorities, measured at any subnational scale. Not a measure of change in minority share over a time-period
Local unemployment rate	Measured at any sub-national scale (e.g., county, region)
National unemployment rate	Measured at the national level
National GDP per capita	Measured at the national level
National minority share	Including the share of immigrants, foreign-born, refugees, ethnic or religious minorities

From an econometric perspective, we include all types of independent variables - continuous, categorical, binary - as long as the corresponding coefficients can be exploited.

Figure 1 shows the entire selection process for the articles and samples we utilise in our meta-analysis.

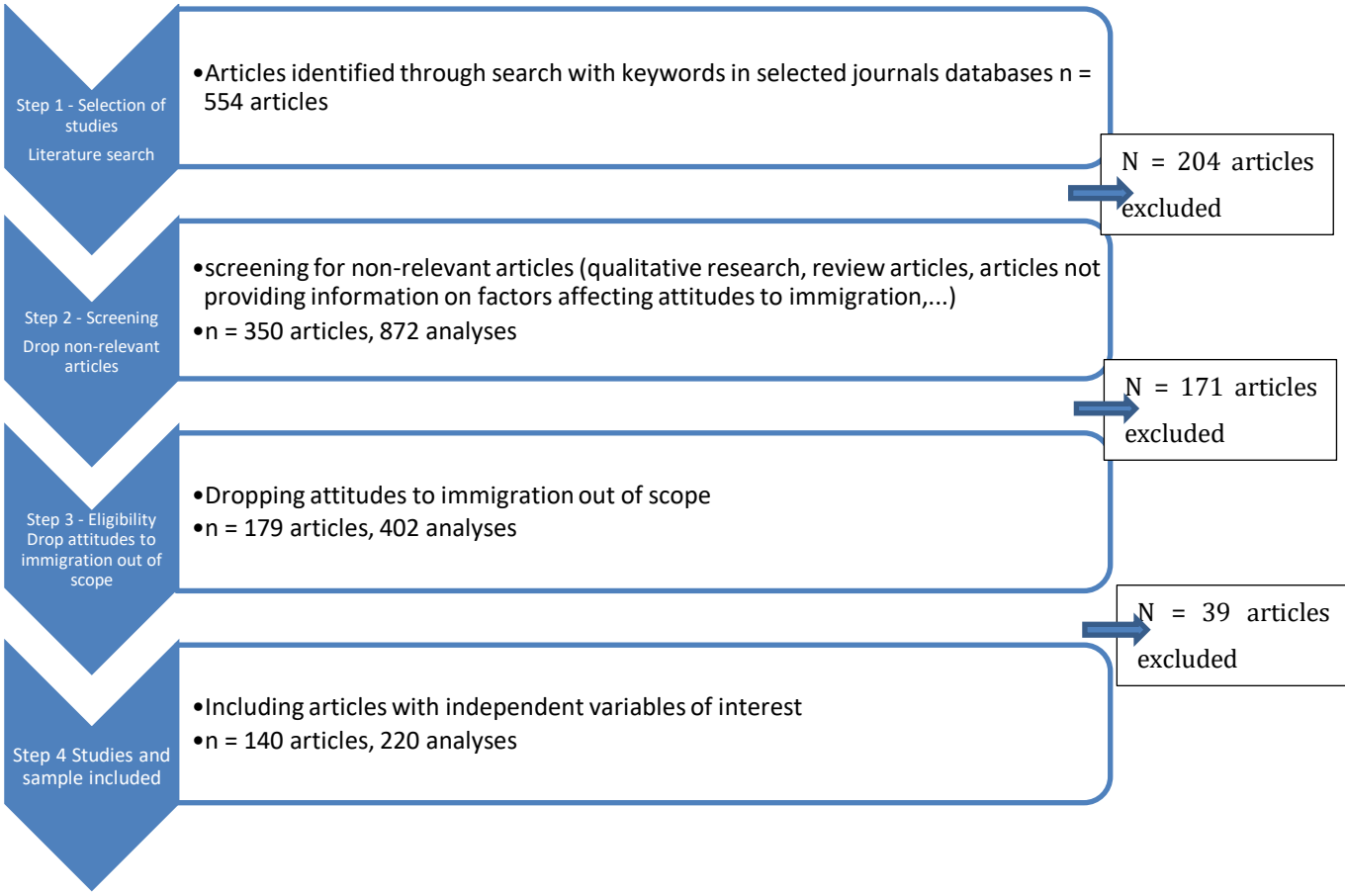

Figure 1. Selection process of relevant articles and studies

The following frequency table (Table 2) shows that among individual-level factors driving attitudes to immigration, education and age are by and large the most readily available among the analyses in our meta-analysis. We also report close to 100 or more observations for other individual characteristics such as gender, employment, minority status, income and place of residence. We found relatively fewer coefficients for contextual-level independent variables. This is partly because many analyses in our sample focus on specific countries or regions and/or use experimental methods on a sample of individuals from the same geographical cluster, making it impossible to study contextual drivers.

It is worth stressing that the distribution of independent variables is based on a set of analyses that were selected in a rather restrictive fashion, as described in section 2. In particular, we have deliberately focused on analyses capturing specific types of attitudes to immigration, with a modicum of external validity, and for which the coefficients associated with independent variables were readily

available from articles' online versions. Therefore, while we believe Table 2 offers a somewhat reliable picture of the relative salience of independent variables most commonly associated with attitudes to immigration, we do not draw general conclusions about the state of the literature.

Table 2. Frequency table of independent variables used in meta-analysis

Independent variable name	Frequency	Percentage
Age	330	15.8
Education	328	15.7
Gender	230	11.0
Being minority	171	8.2
Employed/unemployed	145	6.9
Income	142	6.8
Residence (rural/urban)	121	5.8
Type of occupation (high/low skill)	120	5.7
Contact with minority	80	3.8
Left-right positioning	68	3.2
Religiosity	66	3.2
Local county/region minority share	51	2.4
National minority share	46	2.2
Economic satisfaction (individual)	41	2.0
Ideology	39	1.86
National GDP per capita	27	1.3
National unemployment	23	1.1
Interpersonal Trust	21	1.0
Economic satisfaction (national)	18	0.9
Social Class (subjective)	11	0.5

Local county/region unemployment	11	0.5
Local GDP per capita county/region	7	0.3
Total	**2,096**	**100.0**

Our final working dataset yields 2096 effect sizes across 220 analyses.

3. Results

3.1 Description of the quantitative analyses covered by the meta-analysis

Our meta-analysis covers 140 published articles in total. Table 3 reports the breakdown by discipline. The largest number of articles come from ethnic and migration studies (40.7%, 57 articles). The second and third largest groups are the two social science disciplines that work on attitudes towards migration - political science (26.4%, 37 articles) and sociology (16.4%, 23 articles). Psychology plays a smaller role in our sample (13.6%, 19 articles), due to the fact that many studies published in psychology journals did not meet the sample criteria applied. Economics papers make up by far the smallest share with only four articles (2.9% of our sample). This is because articles that study attitudes towards migration as the outcome variable of interest tend to be difficult to publish in top economics journals.

Table 3. Number of coded articles by discipline

Field	Frequency	Percentage
Ethnic and migration studies	57	40.7
Political science	37	26.4
Sociology	23	16.4
Psychology	19	13.6
Economics	4	2.8
Total	**140**	**100**

In much of the literature on attitudes, including in political science and economics, the common empirical designs still rely on observational data and explicit or implicit assumptions about the data structure and resulting appropriate estimators as their source of identification. Nevertheless, empirical approaches differ widely by discipline. Psychology emphasises experimental designs to provide a source of identification to focus on causal effects. Economics and political science also use a quasi-experimental variation that induces changes in determinants of the outcome of interest that are plausibly exogenous.

By contrast, there is quite a lot of similarity across fields in the choice of statistical models, as Figure 2 shows. The most common statistical modelling approaches are the simplest: Linear regressions and binary outcome models (logit/probit) that account for over half the estimation methods we found in our sample. Besides continuous outcome variables, linear models are sometimes used also when other models might be more suitable. One key reason for this is the ease of interpretation. That is not surprising given that many papers use dependent variables based on 6-point or 10-point scales, where the linear regression model's underlying assumption that the outcome is continuous and (multivariate) normally distributed can become a good approximation.

In sociology and political science, in particular, multilevel modelling and panel models can be found in at least one-third of papers. They are mostly used to study nested data and to capture the effect of variables that relate to several observations (e.g., local, regional, and national factors).

Structural equation models are relatively uncommon but have their niches in all disciplines. The arguably simplest statistics, such as t-tests and correlation coefficients, are used in a non-negligible number of papers (5.3%) in psychology while the other disciplines almost exclusively focus on multivariate methods.

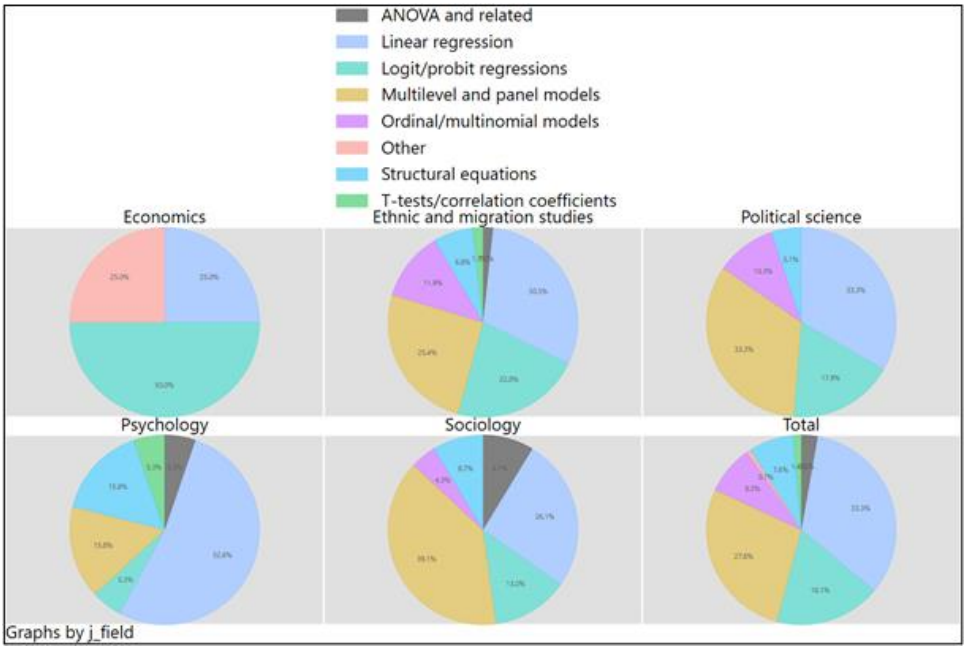

Figure 2. Relative importance estimation methods by disciplines (j_field) in our coded sample

In Table 4 and Figure 3, we study differences in the dependent variables regarding attitudes to migration that are most commonly used. Table 4 reports the ten most frequent types of outcome variables among the 220 unique article-dependent variable combinations.

The most common type of outcome we found in the literature are composites of different migration attitudes. We encountered these in about every fifth article. Their popularity is due to researchers' awareness that attitudes towards migration are complex and multidimensional. Hence, mixing different aspects, such as the economic and the cultural dimensions, is widespread. Composite indices come in different forms. Adding up different dimensions and then using a (standardized) sum or principal component analysis are two common dimension reduction techniques.

The second most common dependent variable is derived from questions about whether more or fewer immigrants should be allowed into the country or community. These outcome variables make up 18% of our sample. The question of whether more or fewer immigrants should be permitted to come is policy-oriented. While the most frequently encountered mix of attitudes does not necessarily have any relationship to the preferred immigration policies that respondents may have, the quantity question is a policy preference.

All other dependent variables are nowhere near as frequently used as the former two, making up at most 5.5% of our sample (e.g. immigrants enrich the culture of their destination country).

Table 4 also highlights that most attitudes-related research is focused on migration in general. Attitudes towards refugees, again framed as a policy question with a quantity statement, are only the fifth most frequent outcome variable. The scope of the literature about attitudes towards migrants is thus broader than reflected by the strong focus of policy-makers on asylum seekers and refugees. Part of this strong focus on immigration, in general, is driven by data availability, but we do not find that forced migration has taken over the literature in the last years despite the importance of the topic in Europe.

Table 4. The ten most common dependent variables used to analyze attitudes towards migration

Name of the dependent variable	Frequency	Percentage
A mix of attitudes to immigration	48	21.8
More/less immigrants	40	18.2
Immigrants enrich culture	12	5.5
Immigrants good for economy	10	4.6
More/less refugees	10	4.6
Immigrants make the country a better place	9	4.1
More/less immigrants from different ethnic group	9	4.1
More/less immigrants from poor countries	7	3.2
More/less immigrants from same ethnic group	7	3.2
Immigrants steal jobs	6	2.7

These two most common types of dependent variables thus mark some of the most fundamental differences in approaching attitudes towards migration. To study these differences in more detail, we assign each dependent variable to either "policy" or "contribution", with the former capturing a quantity statement (i.e., more/less migrants) and the latter positive and negative attitudes regarding immigration´s contribution to culture, the labour market or society, as shown in section 2.4.1

Analysing heterogeneity within the social sciences, we find considerable differences (Figure 3). The few economics papers that are published in top-ranked journals and thus make it into our database show the clearest pattern. They are all focused on policy outcomes. In psychology, political science, and ethnic and migration studies, between forty and fifthy percent of dependent variables are related to policy. In sociology, the distribution is vastly different. Sociology´s focus is clearly on respondents' attitudes about the contribution of immigrants to society and not on their preferred migration policy. This difference between fields fits the general expectation that sociologists are focused on understanding society and

what drives perceptions while economics and political science are more policy-oriented. Psychology and the generally heterogeneous field of ethnic and migration studies rather align with political science according to our analysis.

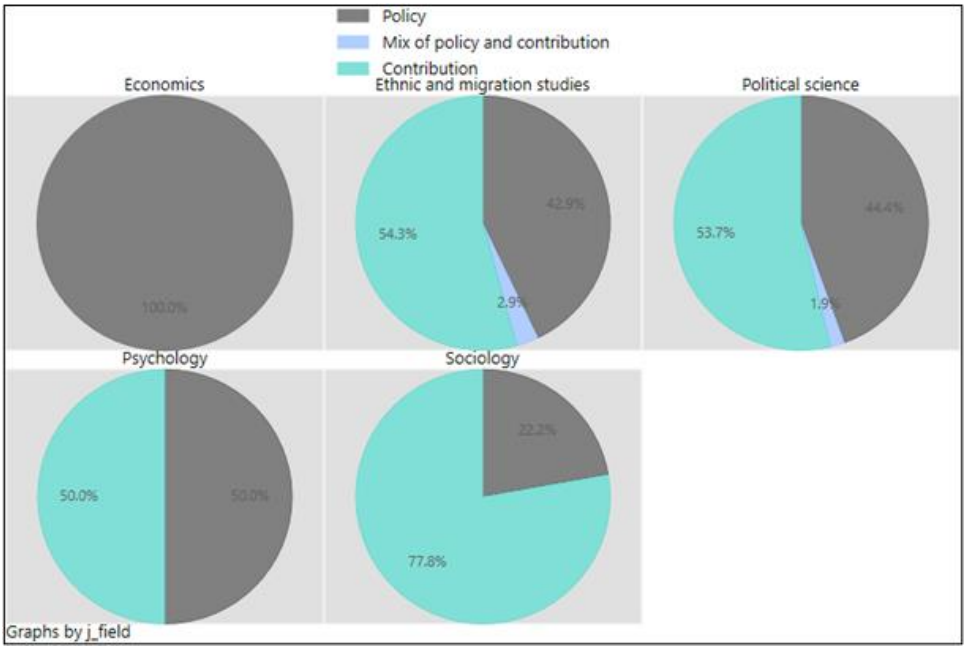

Figure 3. The relative importance of dependent variable type across the social sciences

Moreover, Figure 4 shows that substantial differences exist in sample sizes - the number of individual observations used in a study - across social sciences. While we cannot say much about economics given the limited number of studies in our sample from this field, patterns for the other disciplines reveal a large gap between median and average sample size, which can be explained by the fact that studies in our meta-analysis are drawn from either large-scale surveys (with thousands of observations) or experiments in which the number of treated subjects (individuals) is usually in the range of a hundred.

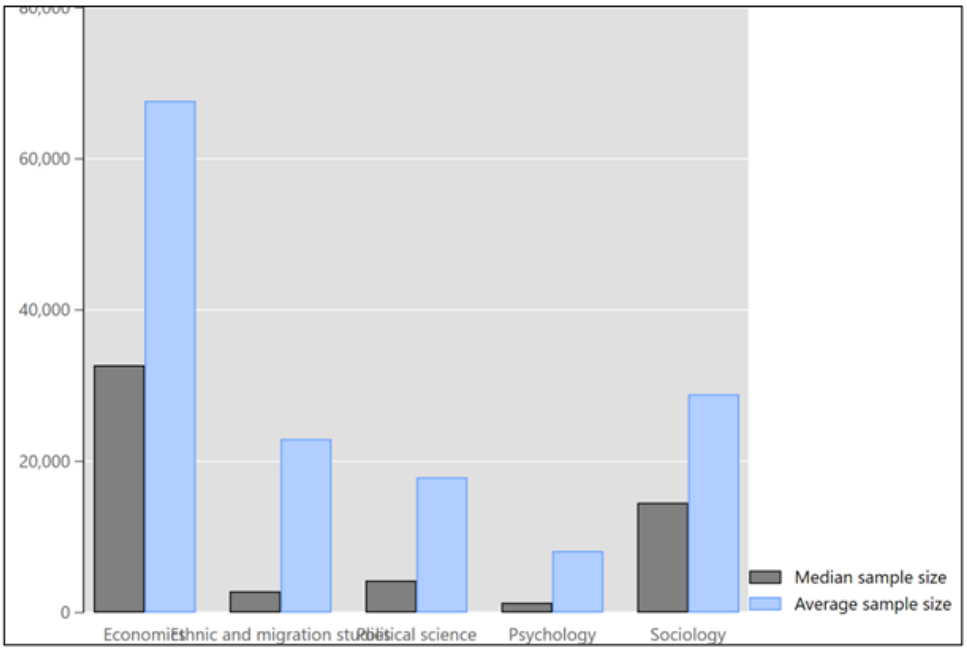

Figure 4. Relative sample size across the social sciences

We next explore the statistical significance of independent variables across social sciences. Figure 5 below paints a basic picture of the independent variable's significance level using the average reconstructed p-value for all coefficients in each discipline. The statistical significance varies substantially across fields and is greater than the 5% threshold in economics and political science.

However, while informative, average p-values do not allow us to draw conclusions about the general quality of the studies surveyed in our meta-analysis. Indeed, some disciplines tend to use high numbers of regressors, risking overfitting, or, in other words, estimating what is sometimes called a "kitchen sink regression". These types of regressions may misleadingly suggest relationships between independent and dependent variables in the data. This is because the more independent variables are included in a regression, the greater the probability that one or more will be found to be statistically significant while in fact having no causal effect on the dependent variable. On the other hand, other fields tend to include fewer control variables and researchers typically report only a few preferred estimates. This approach might also be misleading because such research may reveal only a small fraction of the possible results and may lead to non-robust, false positive conclusions (Muñoz and Young 2018). Indeed, the

number of regressors included in each study largely varies across the social sciences, as shown in Figure 6.

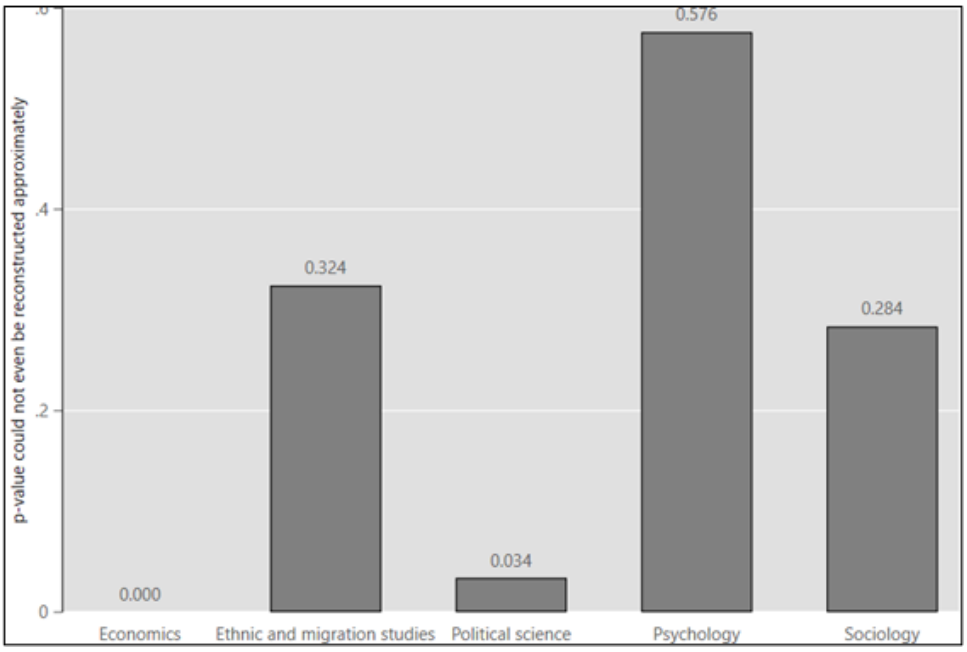

Figure 5. The relative importance (average p-value of coefficients) of dependent variable type across the social sciences

**Note: This figures plots the share of independent variables per discipline for which it was not possible to reconstruct p-values from the information given in the article.*

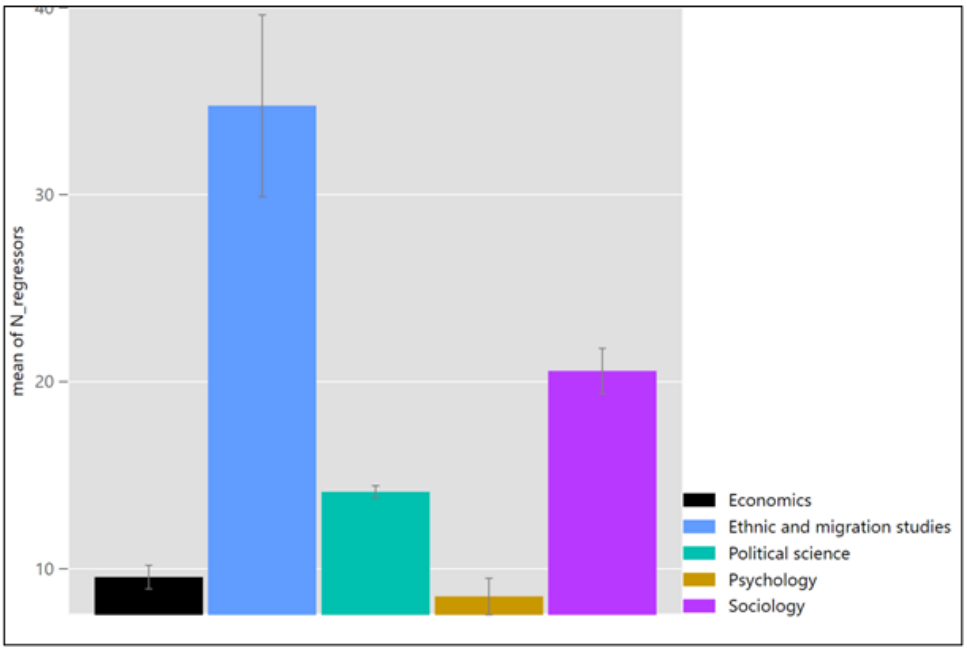

Figure 6. The average number of regressors by study across the social sciences

3.2 What are the most influential drivers of attitudes to immigration?

Figure 7 contains the distribution of reconstructed p-values for the coefficients associated with all independent variables in the study, listed in descending order from the most to the least frequent. The chart can be read as follows: Age is the most frequently used independent variable and the median p-value is 0.046. This means that in more than half of the empirical models we have analyzed, age is statistically significant at the 0.05 level. The 75th percentile is at a p-value of 0.316, indicating that in a substantial part of the models we encountered, age does not correlate significantly with attitudes towards migrants. Age thus plays a mixed role as an independent variable and its role likely depends on the outcome variable, operationalisation of age itself, context and study design. This is consistent with recent findings that show that when isolating the effect of birth cohort on attitudes to immigration, a person's biological age is no longer significant (Gorodzeisky and Semyonov 2018).

Let us now turn to the main results. For most of these independent variables, the median of the reconstructed p-value is lower than 0.1, which many social scientists regard as an acceptable minimum significance threshold given the typical sample sizes. Among these independent variables, the individual-level determinants of attitudes that most consistently have low p-values are **age, education, gender, minority status, residence, occupational status, contact with minority, political views (left-right self-positioning on the political spectrum and ideology), religiosity, economic satisfaction, interpersonal trust and subjective social class**. These are likely to influence individuals' attitudes to immigration, so these may be selected as variables to be introduced in the EMT Tension Function. More often than not, researchers have found that they have a statistically significant correlation, as measured by the p-value. Education, left-right positioning on the political spectrum and economic satisfaction stand out in particular and can be viewed as the independent variables that matter the most across the studies and samples included in our analysis.

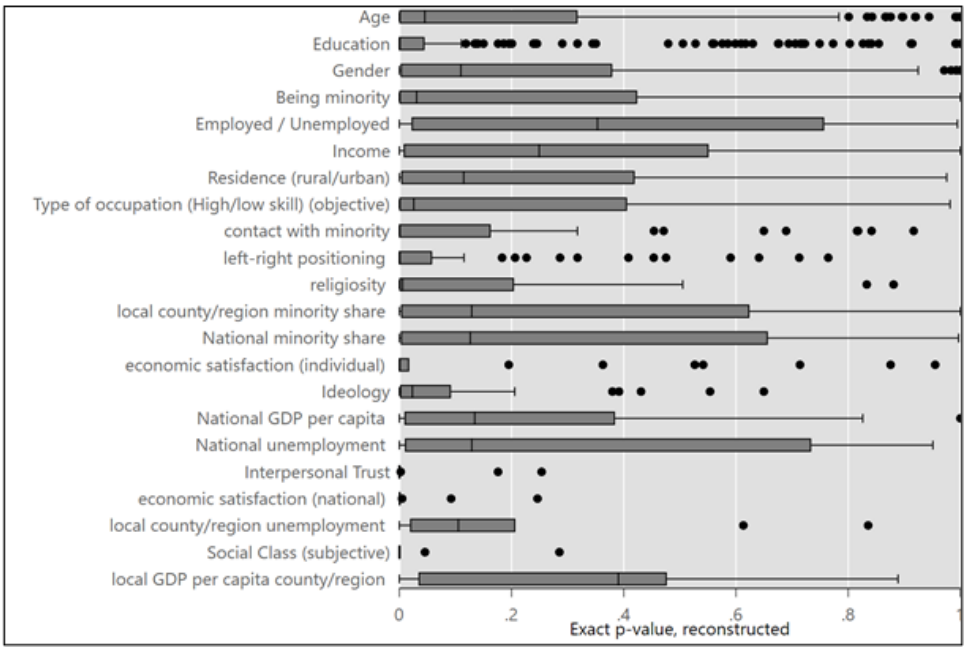

Figure 7. Boxplots of p-values for different independent variables frequently encountered in the literature, decreasing order by frequency of use

Our findings are less conclusive for contextual-level variables, for which the median p-value ranges between 0.1 and 0.2 and even stands at 0.4 for the local GDP per capita. At face value, this suggests that individual-level variables should be regarded as more consistent and significant drivers of attitudes to immigration than contextual-level variables.[12]

Figure 7 also highlights that frequently used variables such as employment status, unemployment, individual income, and rural/urban residence are typically not found to strongly correlate with the dependent variable in the empirical models encountered in the literature.

This interpretation is however subject to two limitations. The first one regards the limited number of coefficients and corresponding p-values for some of these independent variables. As shown in Table 2 (*frequency table*) of section 2.6, the number of effect sizes (i.e. number of observations) is relatively low for variables such as ideology, the local GDP per capita, local unemployment, social class or

[12] Admittedly, this could also be due to higher measurement error of the contextual variables. Nevertheless, even when taking this problem into account, given that we rely on the „best studies" in the fields, we are confident we can still conclude that contextual drivers are less significant.

economic satisfaction at the national level. Fewer data points imply greater uncertainty about the significance of these independent variables, as explained in section 2. Second, the reconstructed p-values are driven by the sample size of the study. This means that the magnitude of the coefficient measured by the researcher may be small in size, but the p-value can be "significant" if the sample size is large. Conversely, an effect can be large but fail to meet a statistically significant threshold (i.e., a small p-value) if the sample size is small.

3.2.1 Additional analyses of factors affecting attitudes to immigration

To address some of the caveats mentioned in the previous section, we perform a regression analysis that controls for each study's sample size. To deal with potential overfitting issues -see section 3.1-, we also control for the number of regressors in each study. Figure 8 reports point estimates for the relative p-value associated with each independent variable along with 95% confidence intervals. We use age as the baseline because it is the most common independent variable. When interpreting the results, one needs to keep in mind that the larger the coefficients, the less significant the independent variable is in relative terms.

Our results indicate that education, interpersonal trust, social class, economic satisfaction, political views (ideology and self-reported left-right positioning), and contact with minorities are more statistically significant than age and are the most influential, i.e. statistically significant variables among those collected for this analysis, and for further tasks within ITFLOWS. Symmetrically, individuals' employment status and income level, as well contextual variables measured at the country-level (GDP, unemployment rate, minority share), are associated with relatively higher p-values, thus significantly predicting attitudes towards immigration less often than other independent variables.

Interestingly, education is relatively more important in explaining attitudes to immigration than income or employment across study designs, i.e., after controlling for sample size. Moreover, we find interpersonal trust, self-perceived social status, and economic satisfaction to be statistically significant more often than some regressors more commonly associated with public opinion to immigration, such as age and gender.

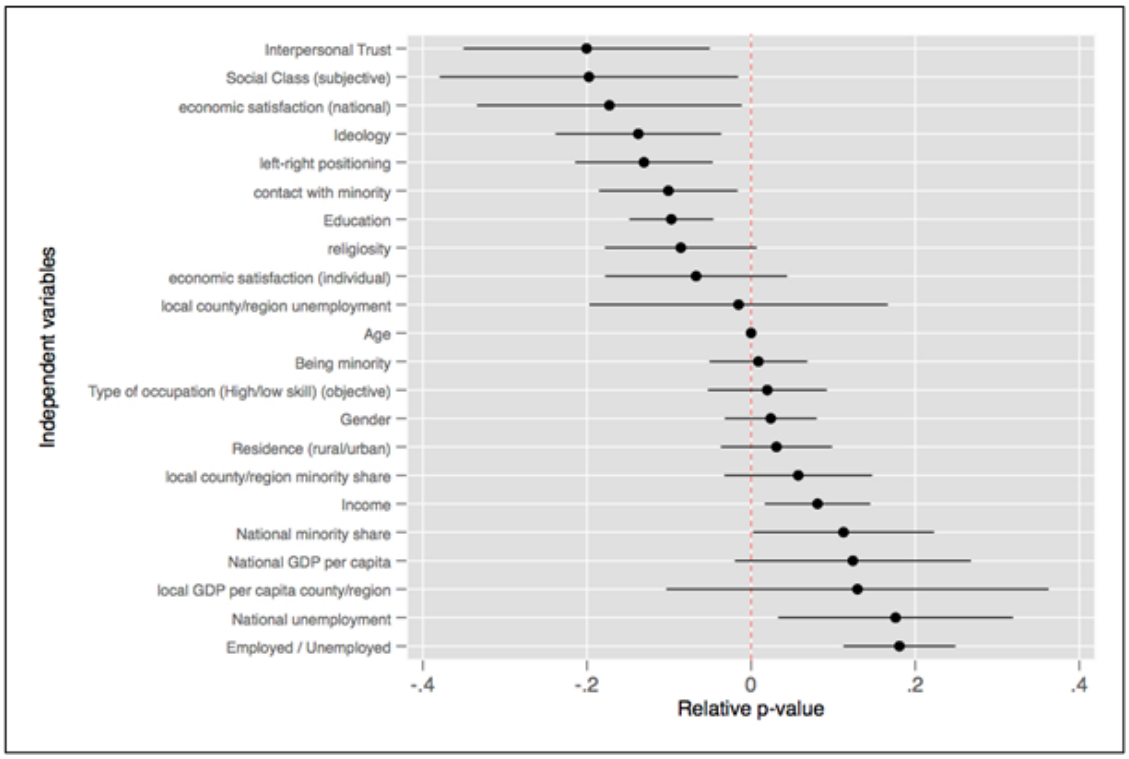

Figure 8. Relative p-values in studies compared to the age coefficient

We take our analysis further by studying how the significance of these independent variables varies with the type of attitudes to immigration. Some independent variables may only matter for certain types of migration attitudes. To analyse this, we distinguish between policy preferences regarding immigration levels and individuals' perception of immigrants' economic, social, political, and cultural contributions.

The results are shown in Figure 9. For most independent variables there are only minor differences. Variables such as the unemployment status at the bottom of the graph tend to have very high p-values regardless of the context. These thus generally matter little for attitudes.

By contrast, for income and occupational status, we find large differences by type of attitude that is used as the outcome variable. Relative to the other independent variables presented here, income and occupation are much more often statistically significant when used to study policy preferences regarding the level of immigration than they are when predicting individuals' assessment of immigrants'

contribution to their country. This fits the theoretical prediction that attitudes about the level of migration vary with whether individuals feel personally affected by economic competition. Skill levels of the occupation (note that this can differ from the education level) or income levels can be the distinctive markers for how closely felt the impact of immigration is. While blue-collar workers might feel anxious about the competition from immigrants, white-collar workers might even welcome more complementary workers for low-skilled occupations that increase the supply of services white-collar workers' demand. The two groups could thus have different preferences when it comes to the level of immigration. At the same time, both these groups might generally agree about the contribution of migrants to society. The results of our meta-analysis thus highlight the importance of considering what kind of attitudes are used in a given piece of research since the relevance of the same determinant can differ markedly.

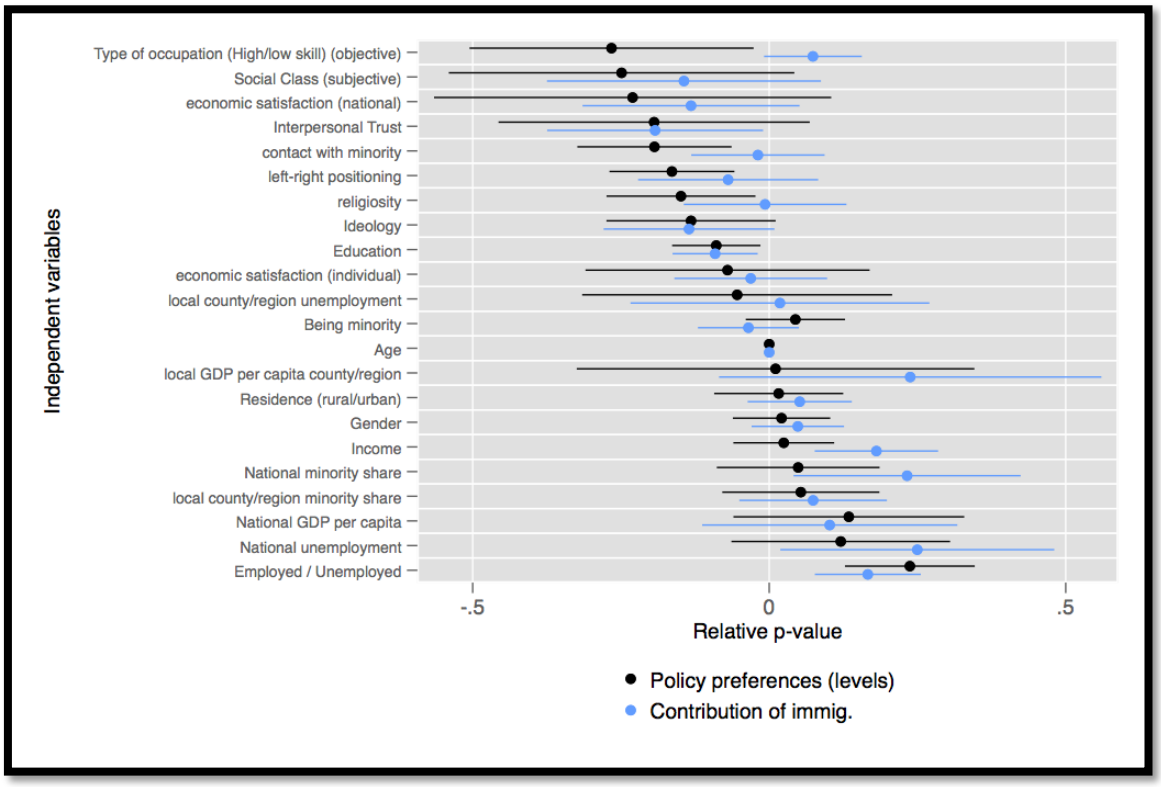

Figure 9. Relative p-values in studies compared to the age coefficient by type of dependent variable

4. Conclusion

There is vast heterogeneity in the empirical literature on attitudes towards migration. This study aims at identifying some patterns that can be used to impose some structure on the literature and bring insights from scholarly analyses of the topic across disciplines, in order to establish the foundations of the EMT Tension Function.

We encountered about 150 different types of attitudes to immigration while conducting this meta-analysis. The two most frequent and most important types of outcome variables that can be used for the EMT capture attitudes towards migration policy (e.g., preferred levels of immigration) and attitudes about immigrants' contribution (e.g., to society or their impact on the economy). The most common class of outcome variables are multidimensional indices, which researchers use to capture the multidimensional nature of attitudes towards migration.

In this context, a key result of our meta-analysis and relevant for the EMT is that some determinants of attitudes seem to matter only for certain dimensions of attitudes. For example, respondents' occupation and income matter much more consistently for attitudes towards migration policy than for their assessment of immigrants' contribution to society. ITFLOWS should thus not merely study the drivers of attitudes that are most commonly used in other scholarly works but always reflect on which determinants can really be expected to matter for the specific dependent variable that is being investigated.

Moreover, our results indicate that education, interpersonal trust, social class, economic satisfaction, political views (ideology and self-reported left-right positioning on the political spectrum) and contact with minorities are the most influential variables among those collected for this analysis and for the EMT. In particular, they seem comparatively more important in explaining attitudes to immigration than other variables often claimed to affect public opinion such as age and gender, and researchers interested in this topic should therefore give careful

consideration to the former drivers regardless of the purpose of their analysis. We test the robustness of these findings and ensure that they do not depend on the peculiarities of certain disciplines, we also control for studies' characteristics, such as the sample size.

Although the statistical models used in the literature are widely shared across the social sciences, the general approach to empirical studies varies considerably. Most profoundly, disciplines differ in their focus on the sources of identification of effects. Some researchers use experimental variation, others rely on identifying assumptions, and yet another group is not explicit about formal identification. Beyond this, the typical sample sizes and structures of empirical models differ vastly. In psychology, where most research is based on small groups of students or other respondents in laboratory settings, statistical power can be a concern. By contrast, the other disciplines we analyze in this overview tend to work with much larger samples. However, many papers are likely prone to overfitting by running "kitchen sink regressions." This is particularly common in ethnic and migration studies.

Another key finding of our analysis and for the creation of the EMT Tension Function is that in most social sciences disciplines there were studies that did not provide sufficient information to construct p-values. Omitting such crucial information makes it impossible to judge how strongly independent and dependent variables are correlated. We strongly urge researchers to make greater efforts to ensure that their results can be compared to those of others - regardless of a discipline's usual way of presenting results. Generally, researchers in the social sciences should adopt best practices in quantitative analyses from neighbouring fields. This will not only improve the chances that research is taken seriously in other social sciences but also increase the impact of a paper in general, and its relevance in identifying potential risks of tensions between migrants and locals.

With regard to the final EMT tool, our meta-analysis is the basis for the next two tasks (T5.2 and T5.3) and deliverables (D5.2 and D5.3) in WP5. Finalising the tasks in the work package will ultimately allow users of the EMT tool to look at various

demographic distributions (e.g. age, educational levels, gender, rural/urban divides etc.) of the population in destination countries and classify regions and countries as more or less likely to view immigration positively.

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Appendix

Table 5. List of top-ranked journals included in the meta-analysis for each discipline

Political Science
African Affairs
American Journal of Political Science
American Political Science Review
Annual Review of Political Science
British Journal of Political Science
Comparative Political Studies
Democratization
Electoral Studies
European Journal of Political Research
Governance
International Organization
JCMS: Journal of Common Market Studies
Journal of Conflict Resolution
Journal of Democracy
Journal of European Public Policy
Party Politics
Perspectives on Politics
Political Analysis
Political Behavior
Political Psychology
Political Research Quarterly

Political Studies
Public Administration
Public Opinion Quarterly
Regulation and Governance
Review of International Political Economy
Socio-economic Review
The Journal of Politics
West European Politics
World Politics

Sociology
American Sociological Review
Sociology of Education
Annual Review of Sociology
American Journal of Sociology
New Media and Society
Socio-Economic Review
European Sociological Review
Work and Occupations
Gender and Society
Theory and Research in Social Education
Sociological Theory
Work, Employment and Society
Social Forces
Sociological Methods and Research

Sociology
Theory, Culture and Society
International Political Sociology
Sociological Review
Social Problems
Sociologia Ruralis
British Journal of Sociology
American Journal of Cultural Sociology
British Journal of Sociology of Education
Social networks
Journal of Consumer Culture
European Journal of Social Theory
Social Science Research
Chinese Sociological Review
Journal of Marriage and Family
Sociological Forum

Psychology
Cyberpsychology Behavior and Social Networking
Personality and Social Psychology Bulletin
Journal of research in personality
Journal of experimental social psychology
Personality and Individual differences
Social Psychological and Personality Science
Social and Personality Psychology Compass

European Journal of Social Psychology
British Journal of Social Psychology
Group Processes & Intergroup Relations
Psychology of Popular Media Culture
Personality and Social psychology review
Social Issues and Policy Review
Journal of Personality and social psychology
European Journal of personality
Journal of Personality
Journal of Social and Personal Relationships
Social Behavior and Personality: An International Journal
Self and Identity
Annual Review of Organizational Psychology and Organizational Behavior
Nature Human Behaviour
Organizational Psychology Review
Research in Organizational Behavior
Journal of Research in Crime and Delinquency
European Review of Social Psychology
The Journal of Social Psychology
Journal of Social and Political Psychology
International Review of Social Psychology
Media Psychology
Journal of Counseling Psychology

Economics
American Economic Review
Econometrica
Journal of Political Economy
Quarterly Journal of Economics
Review of Economic Studies
American Economic Journal: Macroeconomics
American Economic Journal: Economic Policy
Journal of Labor Economics
American Economic Journal: Applied Economics
Journal of Human Resources
Journal of Monetary Economics
Review of Economics and Statistics
Journal of the European Economic Association
Theoretical Economics
Journal of Economic Growth
Journal of Econometrics
Economic Journal
American Economic Journal: Microeconomics
Quantitative Economics
Journal of International Economics
Journal of Applied Econometrics
Review of Economic Dynamics
Journal of Economic Theory
Journal of Business and Economic Statistics

RAND Journal of Economics (formerly: Bell Journal of Economics)
Economic Policy (formerly: Economic Policy: A European Forum)
Journal of Public Economics
IMF Economic Review (formerly: IMF Staff Papers International Monetary Fund Staff Papers)"""
International Economic Review
Journal of Development Economics

Human Migration/Ethnic Studies
Journal of Ethnic and Migration Studies
Ethnic and Racial Studies
Journal of Refugee Studies
Journal of Immigrant & Refugee Studies
Identities
Ethnicities
Ethnicity & Health
Mobilities
International Migration Review
Global Networks
International Migration
Citizenship Studies
Comparative Migration Studies
Journal of International Migration and Integration
Migration Studies
IZA Journal of Migration
Journal of Intercultural Studies

Refugee Survey Quarterly
Migration Letters
International Journal of Refugee Law
Demography
Demography
Journal of Population Economics
Population and Development Review
Studies in Family Planning
Population, Space and Place
Perspectives on Sexual and Reproductive Health
European Journal of Population
Population and Environment
Demographic Research
Population Studies

Table 6. List of dependent variables

Attitudes and policy preferences on integration issues (rights and opportunities)
Allow Balkan immigrants to have rights (teaching, neighbour, hold office)
Allow irregular immigrants' children to attend school
Allow immigrants political rights
Allow immigrants to have rights (teaching, neighbour, hold office)
Allow immigrants the same rights/opportunities as citizens
Allow immigrants social rights
Allow immigrants to work and/or access benefits

Allow Muslim immigrants to have rights (teaching, neighbour, hold office)
Allow refugees to work and/or access benefits
Do immigrants demand too many rights?
Mix of attitudes to immigrants' rights
Mix of attitudes to immigrants. Rights / Allow immigrants political rights/ Allow immigrants social rights
Mix of attitudes to refugees' rights
Mix of attitudes towards naturalization and work permit for immigrants
Attitudes to the naturalization of immigrants
Should the government give priority to natives when jobs are scarce?
Attitudes to residence permit application
Attitudes and policy preferences on cultural issues
Support for multicultural policy
Attitudes to immigrants' culture
Attitudes to immigrants' culture/ Do immigrants enrich the host country's culture?
Attitudes to Muslims' culture and schools
Support for discriminatory policy
Concerns and feelings towards immigrants
Feelings of competition against immigrants
Concerns about immigration
Feelings of dehumanization of immigrants
Feelings towards African immigrants
Feelings towards Asian immigrants
Feelings towards irregular immigrants

Feelings towards immigrants
Feelings towards intra EU immigrants
Feelings towards extra-EU immigrants
Mix of feelings towards immigration
Feelings towards Latino immigrants
Feelings towards refugees
Feelings towards White immigrants
Salience of immigration as a problem
Mix of attitudes to immigration/Feelings to immigrants
Response to injustice towards immigrants
Contribution and consequences of immigration (e.g., economic, cultural, social, political)
Benefits of immigrants for the country
Benefits of immigrants from Ethiopia for country
Benefits of immigrants from FSU (former Soviet Union) for country
Benefits of immigrants from Western countries for country
Economic competition with immigrants
Benefits of immigrants for the country
Benefits of refugees for the country
Immigrants steal jobs
Immigrants are a strain on the welfare system
Immigrants are a problem for the community
Immigrants enrich culture
Immigrants are good for the economy
Immigrants make country a better place

Immigrants are a problem for security
Immigrants are a problem for security in the community
Immigrants are a problem for security/Afraid of immigrants
Mix of attitudes to benefits of Muslim immigrants for the country
Mix of attitudes to benefits of high skill immigration for the country
Mix of attitudes to benefits of immigrants for the country
Mix of attitudes to benefits of low skill immigration
Mix of attitudes to benefits of refugees/asylum seekers
Threat from asylum seekers
Threat from immigrants from Ethiopia
Threat from immigrants from FSU (former Soviet Union)
Threat from immigrants from Western countries
Threat from immigrants to the economic welfare of the country
Threat from immigrants to the economic welfare of the household
Threat from immigrants to the economic welfare system of the country
Threat from immigrants to national identity
Refugees' contribution to the country
Refugees are a problem for security
Preferences on refugees/asylum seekers management (e.g., border management, support, management of flows)
Border security
Detain immigrants with unclear/refugee status
Fend off asylum seekers
Fend off irregular immigrants

Government should support refugees
Legalization of irregular immigrants
National responsibility for costs of providing asylum
National responsibility for hosting immigrants
Support refugees at sea
Support refugees financially
Refugee policy
Attitudes and policy preferences on immigration flows and level
Allow refugees to bring family
Ban on Muslim immigrants
Government judgement of refugee applications
Government should accept refugees
Mix of attitudes to immigration policy
Mix of attitudes to refugees/asylum seekers policy
Mix of attitudes to selective admission of immigrants
More/less Arab immigrants
More/less asylum seekers
More/less immigrants from a different ethnic group
More/less immigrants from poor countries
More/less immigrants from poor European countries
More/less immigrants from the same ethnic group
More/less immigrants
More/less Jewish immigrants from poor countries
More/less labour immigrants

More/less Muslim immigrants
More/less Muslim immigrants from poor countries
More/less refugees
More/less refugees/Mix of attitudes to refugees
More/less refugees from countries with terrorists
More/less Roma immigrants from poor countries
More/less same ethnic group
More/less skilled immigrants
More/less unskilled immigrants
Individual behaviour towards immigrants (e.g., financial support, social distance, assisting in arresting immigrants)
Behavioural intentions
Contact with immigrants
Contact with refugees
Dictator game with immigrants
Donation to immigrant cause
Help immigrants
In-group favouritism
invitation of immigrants to flat viewing
Preference for contact with immigrants
Social distance towards immigrants
Social distance towards Eastern Europeans
Social distance towards Muslims
Support immigrants financially

Support immigrants
A mix of attitudes to immigrants (indistinct)
A mix of attitudes to irregular immigration
A mix of attitudes to immigration
A mix of attitudes to refugees
A mix of attitudes to refugees/asylum seekers
Prejudice and trust towards immigrants
Prejudice against immigrants/perceived differences
Trust towards immigrants

Table 7. Regression table: Relative p-values in studies compared to the age coefficient by type of dependent variable

Type of independent variable	**Policy**	**Contribution**
	Exact p-value, reconstructed	Exact p-value, reconstructed
Age	0	0
	(.)	(.)
Being minority	0.0442	-0.0350
	(1.04)	(-0.81)
Education	-0.0893*	-0.0912*
	(-2.35)	(-2.50)
Employed/unemployed	0.237***	0.166***
	(4.26)	(3.66)
Gender	0.0208	0.0482
	(0.50)	(1.21)
Ideology	-0.132	-0.135
	(-1.81)	(-1.84)
Income	0.0245	0.181***
	(0.57)	(3.41)
Interpersonal trust	-0.194	-0.192*

	(-1.45)	(-2.07)
National GDP per capita	0.134	0.102
	(1.35)	(0.93)
National minority share	0.0489	0.233*
	(0.70)	(2.38)
National unemployment	0.121	0.250*
	(1.28)	(2.12)
Residence (rural/urban)	0.0160	0.0515
	(0.29)	(1.15)
Social Class (subjective)	-0.249	-0.144
	(-1.68)	(-1.22)
Type of occupation (high/low skill) (objective)	-0.266*	0.0737
	(-2.18)	(1.76)
Contact with minority	-0.193**	-0.0190
	(-2.92)	(-0.33)
Economic satisfaction (individual)	-0.0703	-0.0311
	(-0.58)	(-0.47)
Economic satisfaction (national)	-0.230	-0.132
	(-1.35)	(-1.41)
Left-right positioning	-0.164**	-0.0693
	(-3.06)	(-0.90)
Local GDP per capita county/region	0.0107	0.238
	(0.06)	(1.45)
Local county/region minority share	0.0533	0.0740
	(0.79)	(1.17)
Local county/region unemployment	-0.0540	0.0181
	(-0.41)	(0.14)
Religiosity	-0.149*	-0.00691
	(-2.33)	(-0.10)
Sample_size	-0.000000781***	-0.00000140***
	(-3.74)	(-4.72)
Number of regressors	0.00258	0.0000388
	(1.22)	(0.30)

Constant	0.230***	0.207***
	(5.30)	(7.51)
Observations	740	818
R-squared	0.116	0.124

t statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$