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Immigrants from more tolerant cultures integrate deeper into destination countries

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ABSTRACT

We highlight a new factor behind integration: tolerance in the immigrants' background culture. We hypothesize that it is easier to partake of economic, civic-political and social life in a new country for a person stemming from a culture that embodies tolerance towards people who are different. We test this by applying the epidemiological method, using a tolerance index based on two indicators from the World Values Survey – the share that thinks it important to teach children tolerance and the share that considers homosexuality justified – as our main independent variable. Our outcomes are indices of individual-level economic, civic-political and cultural integration outcomes for immigrants of the second generation with data from the European Social Survey. The results indicate that tolerance in the background culture is a robust predictor of integration among children of immigrants in European societies.

1. Introduction

According to Eurostat (2016), 11.5% of the EU population was foreign-born in 2014, while 6.0% were second-generation immigrants (defined as having a least one foreign-born parent). Both shares have undoubtedly increased in recent years, following the refugee waves from the Middle East and Africa to Europe (UNHCR, 2016). Immigration raises the issue of integration – defined by Penninx and Garcés-Mascareñas (2016, p. 14) as “the process of becoming an accepted part of society”.¹ From a research perspective, this involves identifying factors that affect how those with a foreign background can gain access to and participate in various spheres or arenas in society.²

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E-mail address: therese.nilsson@nek.lu.se (T. Nilsson).¹ For indicators of a lack of integration, see, e.g., Eurostat (2021) and Fasani et al. (2022), who document how especially refugees in Europe face a severe problem in the labor market.² We use the concept of integration in an analytical and a non-normative sense. As defined, integration does not necessarily imply assimilation, the giving up of features of life rooted in the country of origin; rather, it is compatible with retaining ties to several countries and cultures, i.e., transnationalism (Dunn, 2005). On the concept of integration, see Penninx and Garcés-Mascareñas (2016).<https://doi.org/10.1016/j.jce.2023.06.005>

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We offer a contribution to the existing literature by studying how a cultural trait, *tolerance* (defined as a preference for non-interference with other people irrespective of their beliefs, actions, or characteristics),³ affects economic, civic-political and cultural integration in Europe. We do not focus on the tolerance of the native population towards immigrants, but rather *the tolerance embedded in the background culture of the immigrants*.⁴ This variable can be interpreted as an indicator of the degree to which the background culture, and by implication the migrants stemming from it, adhere to one of the most distinguishing features of Western culture from at least the 1600s onwards (Forst, 2012).⁵ Our hypothesis is that the more tolerant immigrant cultural backgrounds are, the easier it will be to integrate in the country of birth and residence, due to three mechanisms: that tolerance makes the immigrants themselves open to interacting with the surrounding society by not minding people being different, that tolerance makes people more cooperative, thus making productive use of the openness to interact also with people who are different, and that tolerance sends a signal to natives, e.g., employers, that someone will fit in more easily.

We investigate this matter empirically by applying the epidemiological method (Fernández, 2011), a main advantage of which is the ability to rule out reverse causality. Our sample consists of up to 15,000 s-generation immigrants in 32 European countries with parents stemming from 73 countries. We relate an index of tolerance based on two indicators from the countries of origin – the share that thinks that homosexuality is justified and the share of the population that state it is important to teach children tolerance and respect – to various integration outcomes of the second-generation immigrants. In effect, we are comparing whether differences in integration outcomes among such immigrants, born and residing in the same country, can be explained by differences in the tolerance levels of their countries of origin. We apply a multidimensional perspective and look at indices of economic, civic-political, and cultural integration.

Our main finding is that tolerance plays a positive role for integration. The more tolerant the background culture, the higher the individual degree of economic, civic-political and cultural integration. The results are robust to a number of sensitivity analyses, e.g., with respect to model specification, variable definitions, selection and sample.

This study brings together and extends two literatures: one on tolerance, and one on integration. As regards tolerance, this literature is one of the more recent additions to the emerging field of culture in economics (Guiso et al., 2006; Fernández, 2011; Storr, 2013; Alesina and Giuliano, 2015; de Jong, 2021). A recent study by Berggren et al. (2019) looked at the roots of tolerance towards gay people among second-generation immigrants in Europe. They showed that three factors in the countries of origin were especially important: the share of religious Muslims (negative); fair and effective institutions (positive); and a willingness to teach children tolerance and respect (positive). Other studies have linked tolerance to the economic-legal institutions in place, finding a positive effect of the quality of the legal system and monetary stability and that the relationship is stronger the more social trust there is (Berggren and Nilsson, 2013, 2014), and that social and economic globalization promotes a willingness of parents to teach their children tolerance and respect, since they expect them to do better in a globalized world with an open attitude towards others (Berggren and Nilsson, 2015). A pioneering study was conducted by Corneo and Jeanne (2009), who also developed a theory of how parents may induce tolerance as a kind of insurance mechanism in settings where it is uncertain in what contexts children will find themselves in life and what their identities will be.⁶ To our knowledge, no one has explicitly investigated how tolerance among immigrants (or tolerance in their background culture) affects their success at becoming integrated, which is where our study contributes.⁷

This brings us to the second strand of literature, that on integration, which is vast and which, in economics, primarily focuses on labor-market integration. Previous work has, e.g., looked at the role of education and language skills, which tend to be beneficial for integration (Delander et al., 2005; Hartog and Zorlu, 2009; De Paola and Brunello, 2016; Lochmann et al., 2019). Institutional factors have also been studied, e.g., high minimum-wage laws, strict employment protection regulation, and labor-market access (Kahn, 2007; Skedinger, 2010; Slotwinski et al., 2019), as well as excluding immigrants from voting (Slotwinski et al., 2017; Ferwerda et al., 2020) and what the effects of acquiring citizenship are (Heinmueller et al., 2015, 2019; Gathmann and Keller, 2018). Research also shows that access to social networks (Bethoui, 2007; Hammarstedt and Miao, 2020), job-searching methods (Carlsson et al., 2017) and discrimination (Aldén and Hammarstedt, 2016; Arai et al., 2016; Neumark, 2018; Nessler et al., 2019; Ahmed and Hammarstedt,

³ While this definition is compatible with a classical definition of tolerance, which stipulates a disapproval of the actions, beliefs, or characteristics that the non-interference concerns, it is wider as it allows for non-interference on the basis of either indifference or approval (Von Bergen and Bandow, 2009).

⁴ Others have, in contrast, studied the role of attitudes of natives towards immigrants – see, e.g., Bansak et al. (2016), Lundborg and Skedinger (2016), Grajzl et al. (2018), and Aksoy et al. (2021).

⁵ Akaliyski (2019) notes that countries in the European Union are converging culturally over time, which makes it relevant to talk of a “Western” or “European culture”.

⁶ There is also a small literature on outcomes of tolerance, linking it to economic dynamism, technological progress, higher incomes and economic growth (Ottaviani and Peri, 2006; McGranahan and Wojan, 2007; Das et al., 2008; Florida et al., 2008; Boschma and Fritsch, 2009; Berggren and Elinder, 2012) and recently, to cooperative attitudes and behavior (Eriksson et al., 2021) and to less climate skepticism (Johansson et al., 2022).

⁷ Additionally, there is often a dynamic aspect to values and attitudes. While immigrants are often strongly shaped by their background culture, there also tends to be an adaptation to some extent towards the culture of the country of residence. This points at a possibility for tolerance to increase over time for immigrants moving from low- to high-tolerance settings, possibly because of, among other things, integration, thus enabling further integration, and creating a virtuous circle (should integration be regarded as desirable). For studies indicating the presence of this kind of adaptation for trust, life satisfaction, social preferences, risk attitudes and gender views, see, e.g., Ljunge (2014), Nannestad et al. (2014), Cameron et al. (2015), Helliwell et al. (2016), Bergh and Öhrvall (2018), Dinesen and Sønderkov (2018), Berggren et al. (2020) and Ericsson (2020).

2020; Esses, 2021) are of importance for integration.⁸

The literature highlighting the role of cultural factors in the integration process is, in contrast, relatively small and has not heretofore investigated the role of immigrants' tolerance. Algan et al. (2013) provide an overview of integration for several European countries with a particular focus on cultural factors such as language, religiosity, social and institutional trust, and satisfaction with democracy. Not least, they identify gaps in these variables between natives, first-generation immigrants, and second-generation immigrants, and discuss how to bridge these gaps on the premise that they help explain the degree of integration. Bisin et al. (2011) find, among other things, that second-generation immigrants in Europe have a smaller chance of finding a job than natives if they have a strong ethnic identity, while Carillo et al. (2021) present evidence from Italy that immigrants with strong feelings of belonging to both the country of origin and the country of residence have higher employment rates than those who primarily identify with the country of origin. Blau (2015) and Neuman (2018) study the role of gender values in the countries of origin for immigrant women's labor-market participation and find such values to be important. Koopmans (2016) investigates how language proficiency, interethnic social ties and gender values influence labor-market outcomes for immigrants of Muslim origin and find that these cultural factors offer explanatory value. Lundborg (2013) notes that the region of the world immigrants come from affect how well they do in the labor market, but without quantifying culture as such.

A couple of recent studies on Germany offer further indication of the importance of culture to integration. Aksoy et al. (2020) study how local labor-market conditions and attitudes towards immigrants affect different dimensions of integration, and both factors are found to be as important. In a similar vein, Schilling and Stillman (2021) identify a negative effect on social and economic integration from the share voting for the far-right party Alternative for Germany in a municipality. Our study is similar to these two in that we also examine more types of integration outcomes than the purely economic ones; but instead of looking at the role of attitudes of the native population, we focus on attitudes in the background culture of the immigrants themselves.

2. Theoretical framework

Penninx and Garcés-Mascareñas (2016) present analytical tools for the study of integration. Their general model features two parties (immigrants and the receiving society), three levels (individuals, collectives/groups, and institutions), and three dimensions (legal/political, socioeconomic, and cultural/religious). Integration thus depends on aspects of the immigrants themselves and their organizations, as well as on aspects of people and organizations in the receiving country, who interact, under formal and informal institutions, in the legal/political arena, in markets, and in civil society, in the country in which they jointly reside. The key question is what factors – among immigrants and among natives – that influence how immigrants gain acceptance and access to, and decide to participate in, these dimensions of society.

We apply a modified version of this general model for second-generation immigrants. We retain an interest in the three dimensions, i.e., integration outcomes of a political, economic and cultural kind. We focus on the individual immigrants and their cultural background as a determinant of integration. According to Guiso et al. (2006, p. 23), culture can be defined as “those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation.” This transmission can, in line with Bisin and Verdier (2011), take place in the family (i.e., vertically) or through interaction with the surrounding society (i.e., horizontally, e.g., through friends, colleagues, and media). This implies that an attitude like tolerance, which can be said to consist of both beliefs about others and values about how to treat them, can arise both as a consequence of tolerance in the background culture – transmitted “from generation to generation”, including from the parents of second-generation immigrants to their children – and from the surrounding society in which an individual grows up.⁹ To connect to the model of Penninx and Garcés-Mascareñas (2016), tolerance is seen as an individual second-generation immigrant characteristic that affects how interaction with people in politics, markets and civil society works out. Tolerance is, in turn, shaped both by other individuals, groups and institutions both in the country of origin and in the country of residence.¹⁰

As indicated in the literature review, it is quite common to study integration as a function of the attitudes of natives, to which our study provides a complement. It is quite straightforward to expect integration to be more successful if the people with whom immigrants interact are tolerant – but why expect the tolerance of the immigrants themselves to matter?

Consider the two-dimensional model of Berry (1997, p. 10), as presented in Fig. 1, and how tolerance affects the adopted strategies of acculturation. We take a primary interest in the upper right-hand strategy, *integration*, which means that one holds on to important aspects of one's background culture while also striving to participate politically, economically and culturally in the society in which one lives – and perhaps adopting beliefs and values of the surrounding society over time. The other three combinations are: *assimilation*, where the background culture is not retained and where the “new” society is fully embraced; *separation* (if voluntary) or *segregation* (if involuntary), where one's background culture is retained but where there is little or no involvement in the surrounding society; and *marginalization*, where there is basically no connection to either the “old” or “new” societies and their cultures.

⁸ For a broad analysis of various policy alternatives that affect labor-market integration in the Nordic countries, see Calmfors and Sánchez Gassen (2019).

⁹ Intergenerational transmission of traits, values, and behavior has been documented, e.g., with regard to religion (Bisin and Verdier, 2001), risk preferences and trust (Dohmen et al., 2012; Ljunge, 2014), the environment (Grønhoj and Thøgersen, 2009), female labor-force participation (Fernández et al., 2004), work ethic (Bogt et al., 2005), and party choice (Settle et al., 2009).

¹⁰ Our empirical method infers the individual tolerance level of second-generation immigrants from the tolerance level of the country from which the parents migrated. See Section 3.2 for details.

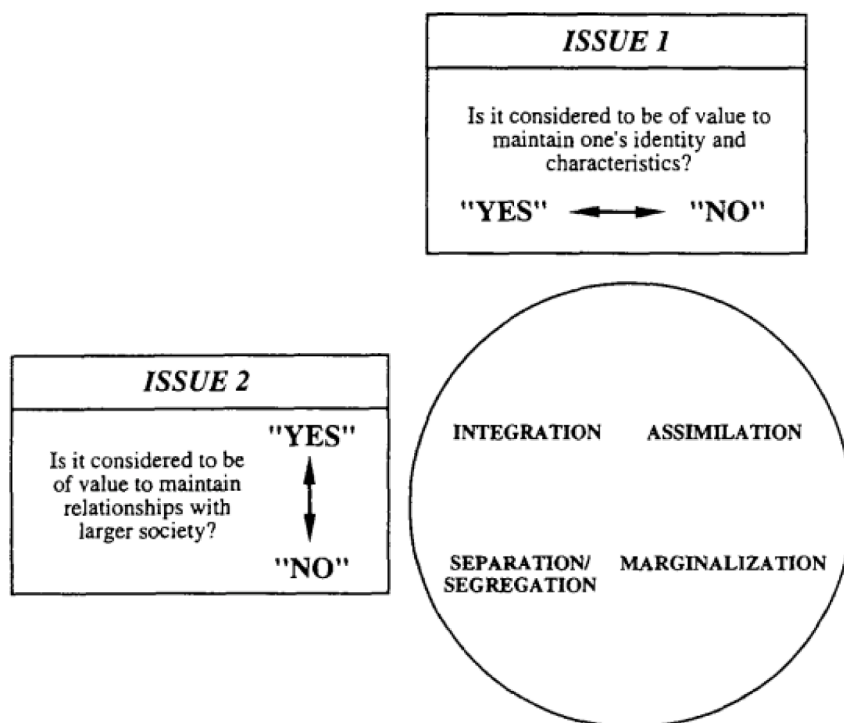


Fig. 1. Four acculturation outcomes.

Source: Berry (1997, p. 10).

We argue that tolerance among immigrants, all else equal, makes integration more plausible than the other three combinations – and the more tolerance, the more integration. First, tolerance among immigrants stimulates openness to others in their country of residence, including natives and other minorities, which makes it more likely that they themselves are willing to interact more and become part of society in the various dimensions under study.¹¹ Second, new research indicates that tolerance predicts a willingness to cooperate with others (Eriksson et al., 2021). Hence, tolerance is not only about preferring not to interfere with others but also about actively being willing to interact and “do business” with them. This has straightforward implications for integration. Third, tolerance among immigrants sends a signal to others that they are willing to partake in economic, political, and social life, which can generate a welcoming attitude in return. For example, an employer considering employing someone where the workforce or clientele consists of people with differing characteristics will be more interested in hiring a person who is tolerant, as this will facilitate creating a sense of community and camaraderie, which is arguably good for business (cf. Storr and Choi, 2020). Berry (1997, p. 10) points out that “a mutual accommodation is required for integration to be attained”, and tolerance is closely related to making such accommodation come about on both sides.

3. Data and empirical approach

3.1. Data

3.1.1. The sample

To test the hypothesis that tolerance in the background culture improves integration, we use a sample consisting of up to 15,000 individuals, all of them second-generation immigrants in 32 European countries covered by the European Social Survey (ESS), waves 2–6. Their parents have migrated from 73 countries all over the world.

3.1.2. The dependent variables

The dependent variables are four indices of individual-level integration, which aim at covering key dimensions of integration, using data from the ESS. The basis of the indices are seven indicators. For economic integration, we use income (the question was: “[P]lease tell me which letter describes your household’s total income, after tax and compulsory deductions, from all sources?”, where the letters

¹¹ Indeed, Berggren and Nilsson (2015) show that economic and social globalization make people more willing to teach children tolerance because they believe it will benefit the children, e.g., by making them more willing and better equipped for socializing and working with people who are different from them, at home and abroad.

correspond to deciles); whether the individual is self-employed (the reply choice was: “In your main job are/were you self-employed?”); and whether the individual has a university degree (the reply choice was either “lower tertiary education” or “higher tertiary education” to the question “What is the highest level of education you have successfully completed?”).¹² In a robustness check, we use a measure indicating whether the respondent is employed or not, taking the value 1 if paid work was the main activity in the last seven days. As indicators of civic-political integration, we use whether respondents in the past twelve months participated in at least one of the following activities: a demonstration, signed a petition, wore or displayed a campaign badge/sticker or worked in an organization, and as a separate item voting in elections (the respondent replied “yes” to the question of whether they voted in the last national election). As a first indicator of cultural integration, we use language. The variable is coded as 1 if the respondent if the respondent did not list a second language in addition to the dominant language of the country of residence when asked “What language or languages do you speak most often at home?”; 0 otherwise.¹³ As a second indicator of cultural integration, we use tolerance towards gay people (asking to what degree respondents agree with the statement “gay men and lesbians should be free to live their own life as they wish”, with answers ranging from “Disagree strongly”, coded as 1, to “Agree strongly”, coded as 5). It is also an indicator of the degree of transmission from the culture of the country of origin to the second-generation immigrant. The fourth index, Integration, is the average of the three indices specified here.

The constituent variables included in the integration measures are standardized (mean 0, standard deviation 1). The integration measures are the unweighted averages of the constituent variables. The use of these composite measures, which can be seen as indices of the large number of underlying variables, reduces the risk of multiple-testing bias (cf. Kling et al., 2007).

3.1.3. The main explanatory variables

The main explanatory variable is tolerance in the country of origin, which is the average of two indicators from the World Values Survey (WVS) and European Values Study (EVS), measured as average values for the countries of origin in waves 3 and 4.¹⁴ The two components are standardized (mean 0, standard deviation 1), and our baseline tolerance measure is the equally weighted average of the two standardized components.¹⁵

The first tolerance measure is the share of the population that replies 6–10, on a 10-point scale, to the instruction “Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between”, with “homosexuality” being the statement in question. The second measure is the share of people who answer “Tolerance” when being asked the question: “Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important?”.

In addition, we carry out a sensitivity analysis where we add two and three additional tolerance indicators from the WVS/EVS, respectively: first, the shares in the countries of origin that do not pick “people of a different religion” and who do *not* pick “unmarried couples living together” when asked which groups they do not want to have as neighbors; then also the shares in the countries of origin that do not pick “people of a different race”. A further sensitivity test interacts our baseline tolerance measure with an indicator from the ESS of tolerance among natives in the country of residence: the degree to which they wish to allow immigrants of different race/ethnic groups than the majority (with four reply options). In one exercise, we also replace Tolerance with two indicators of the absence of discrimination. The first measure is called the Gay Travel Index (Spartacus, 2021), which is an assessment of countries by LGBT people themselves about how this group is treated. It consists of 17 categories, ranging from gay marriage to death penalty for homosexuals, and a country is given points in accordance with how much non-discrimination there is. We use the first available data from 2012. The

¹² We regard self-employment as an indicator of the *absence* of integration, based on the idea that it indicates a difficulty in entering the regular labor market. This means that self-employment among a large share of immigrants can be understood as having arisen out of necessity. Moreover, if such self-employment primarily takes place in ethnic enclaves, in the form of small businesses catering to the own ethnic group, this is a further indication of a lack of integration. Lastly, it could also be that self-employment negatively impacts the chance of entering the labor market at a later stage, which is also negative for integration. For studies supporting these interpretations, see, e.g., Hjerm (2004), Hammarstedt (2006), Baycan-Levent and Nijkamp (2009), Blume et al. (2009), Andersson and Hammarstedt (2015), Aldén et al. (2021, 2022) and Lens (2022). In consequence, when computing Economic integration, we *subtract* self-employment from the sum of the other constituent variables (which are added together), before dividing with the number of constituent variables to get an average.

¹³ One could consider this indicator being about assimilation rather than integration, but for three reasons we consider it adequate to see it as an indicator of the latter: (i) the question concerns what languages are *most often* spoken at home, and it does not preclude the language of the country of origin also being spoken a great deal; (ii) if the choice of language is voluntary, it arguably reflects integration more than assimilation, and we think it reasonable to regard the choice of language in the home as mostly voluntary; and (iii) even if the language of the “new” country is mostly spoken at home, this does not necessarily negate the cultural heritage from the country of origin in other dimensions.

¹⁴ By the country of origin is meant the birth country of the immigrant parent(s). If both parents are immigrants, the individual’s tolerance measure is computed as the mean of the tolerance of the mother’s and father’s birth countries.

¹⁵ We do not include the tolerance questions from waves 1 and 2 of the WVS/EVS, since there is a clear time trend toward more tolerance across these waves, and only a small set of countries is included. Tolerance is stable in waves 3 and 4, and these waves cover a wide set of countries, which makes them suitable for our analysis.

second measure is the Global Index on Legal Recognition of Homosexual Orientation from [Badgett et al. \(2019\)](#). This indicator goes back further in time, and we use data from around 1980.¹⁶ The total score for each assessed country ranges from 0 to 8. Lastly, we use a dummy variable of discrimination from the ESS as an alternative outcome variable, which takes the value 1 if the respondent indicated that he or she is a member of a group that is being discriminated against in the country of residence.

Why do we choose to construct our baseline tolerance measure using the two tolerance indicators mentioned above? We do so based on a two-step procedure. We begin by considering theoretical relevance based on three criteria.

The first is that the indicator should capture an important aspect of tolerance, which all the tolerance questions discussed above do. The second criterion is that the indicator should not be unduly influenced by contextual factors. Tolerance measures that ask about neighbors and minorities are problematic in this sense since neighbors or ethnic minorities may refer to different populations in the ancestral country (where we measure it) and the second-generation immigrant's birth country (where we want to predict tolerance). The third criterion is that the measure should plausibly be transmitted across generations. The contextual tolerance indicators that concern neighbors or minorities are not clearly satisfying this criterion, as it is not clear how the contextually framed tolerance is transmitted to a different context. Our two baseline indicators, the justifiability of homosexuality and the importance for kids to learn tolerance, pass all three dimensions of theoretical relevance. In addition, we think the combination is also appealing in offering breadth: the indicator capturing tolerance towards gay people concerns a specific minority (at the center of much cultural and political debates in Europe in recent decades), while the indicator about kids being taught to be tolerant is more general.

The second step in our procedure is empirical relevance. This step is akin to a first stage where we regress the tolerance of the second-generation immigrant on the different tolerance measures in the ancestral country using a model like (1) discussed in the next section. This is a test of intergenerational transmission from the ancestral country tolerance measure to the tolerance of the second-generation immigrant. The tolerance measure we have for the second-generation immigrants is the ESS question if "gay men and lesbians should be free to live their own life as they wish". We find that only two ancestral-country tolerance indicators are significant at the conventional 5% level, and that only these two variables therefore pass the empirical relevance test: the justifiability of homosexuality and the importance for kids to learn tolerance (see Table A1 in the Online Appendix for details). An additional empirical reason for not including the three other tolerance indicators in the baseline Tolerance measure is that when doing so, we lose about 30% of the sample.

In sum, two tolerance variables pass both the theoretical and empirical relevance tests, and these form our baseline tolerance measure. As noted above, we nevertheless include three additional tolerance indicators, and two legal indicators, in a robustness analysis.

3.1.4. The control variables

The control variables used are, on the one hand, individual-level ones pertaining to our sample of second-generation immigrants in the ESS and, on the other hand, an aggregate-level one pertaining to the countries of origin. As the former, we use age, age squared, and whether the respondent is female. These controls may influence integration outcomes and are exogenous. In a sensitivity analysis, we add married, never married, religious (answering the question "Regardless of whether you belong to a particular religion, how religious would you say you are?" on a scale from 0 to 10), Muslim, the degree of social trust, the degree to which one finds it important to make own decisions and be free, the degree to which one finds it important to follow traditions and customs and disagreement with the statement that men should have more right to a job than women when jobs are scarce. We also add individual controls for the parents: whether the father and mother have a university degree, whether they were working when the respondents were 14 years old (a dummy variable) and a range of occupation dummies.

We use real GDP per capita (in logarithmic form, from the World Development Indicators) to control for the level of material well-being in the country of origin. In a sensitivity analysis, we add two indicators of institutional quality and five cultural variables for the countries of origin. As for the institutional indicators, we include a measure of democracy (Polity2, measuring countries on a scale from -10 to +10, from autocracy to democracy; [Center for Systemic Peace, 2022](#)) and a measure of the rule of law (from Worldwide Governance Indicators, measuring the quality of the legal system on a scale from -2.5 to +2.5; [World Bank, 2022](#)), to capture whether formal institutions in the country of origin matters for integration and whether tolerance retains an influence when these factors are accounted for. It could be that tolerance captures institutional quality (see, e.g., [Berggren and Nilsson, 2013, 2015](#), and [Berggren et al., 2019](#)). As for the cultural variables, they are individualism (the extent to which people feel independent, as opposed to being interdependent as members of larger wholes; from <http://www.geerthofstede.nl/dimension-data-matrix>), social trust (the share that thinks that most people can be trusted; from the WVS/EVS), the share of Muslims (from [Barro and McCleary, 2006](#)), the share regarding themselves as a religious person (from the WVS/EVS) and the female labor participation rate (which can be seen as a reflection of gender equality; from World Development Indicators).

Descriptive statistics are presented in [Table 1](#). The sample sizes, along with Tolerance values, by country of origin are presented in [Table A2](#) in the Online Appendix.

¹⁶ Its eight categories are: (1) Legality of consensual homosexual acts between adults; (2) Equal age limits for consensual homosexual and heterosexual acts; (3) Explicit legal prohibition of sexual orientation discrimination in employment; (4) Explicit legal prohibition of sexual orientation discrimination regarding goods and/or services; (5) Legal recognition of the non-registered cohabitation of same-sex couples; (6) Availability of registered partnership for same-sex couples; (7) Possibility of second-parent and/or joint adoption by same-sex partners; and (8) Legal option of marriage for same-sex couples.

Table 1
Descriptive statistics.

	Obs.	Mean	Std. dev.	Min	Max
<i>Individual variables</i>					
Integration	8502	0	0.425	-1.56	1.13
Economic integration	9405	0	0.604	-1.61	1.58
Civic integration	12,819	0	0.752	-1.20	1.00
Cultural integration	13,696	0	0.687	-2.17	0.736
Income (decile)	10,319	5.28	2.83	1	10
Self-employed	12,719	0.11	0.31	0	1
Employed	14,266	0.508	0.50	0	1
University degree	14,338	0.10	0.30	0	1
Voted (in the last national election)	12,819	0.74	0.44	0	1
Civic participation	14,338	0.33	0.47	0	1.00
Language	14,338	0.82	0.39	0	1.00
Tolerance (towards gays and lesbians)	13,696	3.76	1.24	1	5.00
Age	14,286	44.73	18.15	14	102.00
Age squared (/100)	14,286	23.30	17.37	1.96	104.04
Female	14,331	0.54	0.50	0	1
Married	13,908	0.47	0.50	0	1
Never married	13,908	0.33	0.47	0	1
Religious	14,194	4.49	3.09	0	10
Muslim	14,338	0.03	0.18	0	1
Social trust	14,271	4.96	2.45	0	10
Important to be free	13,963	4.86	1.10	1	6
Important with traditions	13,958	4.18	1.43	1	6
Male preference for jobs	8636	3.57	1.25	1	5
Member of a group discriminated against	14,132	0.10	0.30	0	1
University degree, father	14,338	0.19	0.39	0	1
University degree, mother	14,338	0.16	0.36	0	1
Father working when respondent was 14	14,338	0.84	0.37	0	1
Mother working when respondent was 14	14,338	0.61	0.49	0	1
<i>Country-of-origin variables</i>					
Tolerance (baseline, 2 standardized components)	14,338	0	0.891	-1.71	2.38
Share finding homosexuality justified (rated 6–10)	14,338	0.26	0.20	0	0.78
Share wanting to teach children tolerance	14,338	0.71	0.09	0.48	0.92
Log real GDP per capita	14,337	9.57	0.77	6.71	11.06
Democracy (Polity2)	14,018	7.72	3.77	-10	10
Rule of law	14,338	0.43	1.05	-1.45	1.99
Share religious	14,323	0.68	0.15	0.16	0.96
Individualism	12,536	0.57	0.19	0.12	0.91
Social trust	14,338	0.29	0.13	0.08	0.74
Share of Muslims	14,338	0.12	0.27	0.00	0.99
Female labor participation rate	14,337	0.42	0.09	0.11	0.81
Tolerance different religion	10,190	0.87	0.10	0.48	0.99
Tolerance unmarried couples	10,190	0.88	0.19	0.14	1
Tolerance race	14,317	0.87	0.077	0.555	0.98
Tolerance4 (4 standardized components)	10,190	0	0.848	-2.48	1.58
Tolerance5 (5 standardized components)	10,190	0	0.835	-2.20	1.49
Non-discrimination GILRHO	13,964	1.24	1.07	0	5
Non-discrimination Gay Travel Index	14,092	-0.81	5.87	-13	9
<i>Country-of-residence variable</i>					
Tolerance (towards immigrants)	14,338	2.44	0.28	1.81	3.14
Tolerance (country of origin) x Tolerance (country of residence)	14,338	0.08	2.21	-5.14	7.48

3.2. Empirical approach and model

We use the epidemiological method pioneered by [Fernández and Fogli \(2006, 2009\)](#); cf. [Fernández \(2011\)](#). The idea is to study second-generation immigrants and relate some individual-level outcome variable (integration, in our case) to a characteristic of their country of origin (tolerance, in our case). This avoids any problem of reverse causality, since individual outcomes in one country arguably cannot affect the culture of another country, especially not when measured beforehand.

The method is illustrated in [Fig. 2](#). The dashed lines, from tolerance in the country of origin to individual tolerance, and from individual tolerance to individual integration, feature the proposed mechanism. A cultural trait (tolerance) in a country is absorbed by the individuals being born, brought up and living in that country. Some of these individuals emigrate to a new country and bring with them cultural traits from their country of origin. When they have children in the destination country, they bring them up in line with the background culture – what [Bisin and Verdier \(2001, 2011\)](#) call vertical transmission of values takes place – and the children are also characterized by, in this case, the tolerance of the parents' birth country. This individual-level trait (along with various country-of-birth and individual characteristics) then affects these children's integration outcomes. However, this two-stage mechanism is *not* directly studied here, for two reasons: there are no data on the tolerance of the migrant parents, and even if there were, the

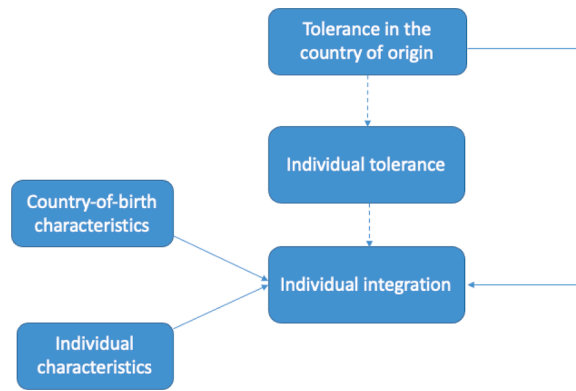


Fig. 2. The epidemiological method.

results could suffer from reverse causality, as the tolerance of parents can be influenced both by the tolerance and the integration of their children.

Instead, we study the fully drawn lines – how the tolerance in the background culture of the family relates to individual integration outcomes of second-generation immigrants, on the assumption that vertical transmission takes place.¹⁷ This allows us to avoid the problem of reverse causality. Since the country of residence can also exert an influence, we control for this using region by ESS-wave fixed effects, effectively comparing how individuals in the same European region of a country (as defined in the ESS) with immigrant parents from different countries integrate in relation to the tolerance levels of their background countries. The regional level of comparison is one approach to account for sorting. One might be concerned that more tolerant individuals would locate in a region of a country with more tolerant inhabitants, which could facilitate integration. With regional comparisons this issue should be of less concern. We also control for individual-level characteristics with a potential to shape integration.

We estimate Eq. (1) using OLS:

$$Integration_{ica} = \beta_0 + \beta_1 X_a + \beta_2 Q_a + \beta_3 Z_{ica} + \gamma_r + \varepsilon_{ica}, \quad (1)$$

where $Integration_{ica}$ is an indicator of integration of second-generation immigrant i , born and residing in country c with parents born in country a , where $a \neq c$. The variable X_a is a measure of tolerance in country a . Q_a is a vector of controls for country a . Z_{ica} is a vector of individual controls, γ_r is second-generation immigrant i 's region-of-residence by survey-wave fixed effects (which control for culture, institutions and other stable, unobserved characteristics of region r in country c in each year), and ε_{ica} is the error term. Standard errors are clustered by country a to allow for arbitrary correlations of the error terms among second-generation immigrants from that same country.

4. Results

4.1. Baseline results

Our main finding is that tolerance promotes integration, as suggested by the unconditional relationships between Tolerance and the integration outcomes in Fig. A1 in the Online Appendix. Adding control variables, Table 2 presents our baseline results. All three dimensions of integration, as well as the overall index, are positively and significantly related to Tolerance (country of origin). To get an understanding of the estimated effect sizes, an increase in Tolerance by one unit is associated with an increase in Integration with 8.3% of one unit, which corresponds to a standardized effect size of 17.4%.¹⁸ For Economic integration the corresponding effect is 6.7% of one unit (a 9.9% standardized effect size), for Civic integration it is 12.2% of one unit (a 14.4% standardized effect size) and for Cultural integration it is 9.9% of one unit (a 12.8% standardized effect size). To summarize, second-generation immigrants in Europe appear more integrated – economically, politically and culturally – if they emanate from cultures that put a value on being tolerant.

In Table A3, we show results when replacing the indices of integration with the seven components on which they are based. Six are

¹⁷ One of our integration outcomes is the individual tolerance of the second-generation immigrants, but by relating it to the measure of tolerance in the country of origin, we in effect present a test of vertical transmission as well. The positive and significant point estimate is indicative of individual tolerance being influenced by tolerance in the background culture. However, we refrain from using individual tolerance as an explanatory factor of integration outcomes due to the distinct risk of reverse causality.

¹⁸ Since we follow Kling et al. (2007), the individual tolerance and integration variables have been standardized with a mean of 0 and a standard deviation of 1. However, the composite tolerance and integration variables are not standardized in that way. Hence, the standardized effect size is computed as the estimated coefficient times the standard deviation of the tolerance measure divided by the standard deviation of the integration measure (times 100 to express it as a percentage). The value expresses the effect of a one standard deviation increase in tolerance as a share of the standard deviation of the integration measure.

Table 2
Baseline results.

Dependent variable →	Integration	Economic integration	Civic integration	Cultural integration
Tolerance (country of origin)	0.0828 (0.0198)	0.0670 (0.0185)	0.122 (0.0304)	0.0986 (0.0349)
Log real GDP per capita (country of origin)	-0.0280 (0.0193)	-0.0574 (0.0188)	-0.00134 (0.0293)	0.00531 (0.0354)
Age	0.0215 (0.00253)	0.0179 (0.00239)	0.0350 (0.00206)	0.0216 (0.00579)
Age squared	-0.0229 (0.00245)	-0.0229 (0.00261)	-0.0307 (0.00222)	-0.0230 (0.00539)
Female	0.0340 (0.0107)	0.0214 (0.0164)	-0.00935 (0.0181)	0.0857 (0.0109)
Constant	-0.199 (0.181)	0.265 (0.178)	-0.861 (0.289)	-0.540* (0.312)
Observations	8482	9385	12,770	12,173
R-squared	0.191	0.169	0.150	0.182

Notes: Robust standard errors in parentheses, which are clustered on the parent's birth country. All regressions include region-of-residence x ESS-wave fixed effects.

* $p < 0.1$.

related to Tolerance in a statistically significant way (Language is not). Notably, Tolerance in the country of origin predicts individual tolerance, in support of our theory of vertical transmission.

4.2. Robustness checks

We perform seven robustness checks, to see whether our baseline findings are sensitive to various changes to the empirical analysis. First, we add two categories of variables for the countries of origin: two indicators of institutional quality and five cultural variables, while still controlling for GDP per capita. The reason for adding these variables is that tolerance may capture other elements of these countries that relate to integration. Indeed, previous research, e.g., Berggren et al. (2019), indicates that tolerance is related to both institutions and culture in the countries of origin of second-generation immigrants in Europe. With regard to the institutional variables, we add an indicator of the degree of democracy and an indicator of the rule of law. When it comes to the cultural variables, which are the share of religious persons, individualism, social trust, share of Muslims and the female labor participation rate, there are conceptual similarities between these and tolerance, but also differences, and sufficiently clear such differences to justify studying consequences of tolerance. To investigate the empirical case for this view, we provide two tests, shown in Table 3 below and Table A4 in the Online Appendix. The first table shows results when adding these seven new variables at the same time, whilst the second shows results when adding them one at a time (taking the potential problem of multicollinearity seriously). The tables give a clear picture: Tolerance is robust to the inclusion of the seven institutional and cultural variables from the country of origin of our respondents (although the point estimates are generally reduced in size). This holds for the overall integration outcome, as well as for economic, civic and cultural integration. This exercise can hopefully assuage concerns that it is other cultural or some basic institutional variables, rather than tolerance, that drive the result. That being said, some of the added variables matter as well—for example, overall integration appears to benefit from the rule of law, social trust and the female labor participation rate.

Second, we add new individual-level control variables from the ESS to the exogenous ones of the baseline model (age, age squared and gender). Although there is a risk for endogeneity, it may still be instructive to see whether individual traits might relate to integration and, not least, whether Tolerance in the country of origin retains its strong association with our integration outcomes when adding more individual control variables, some of them roughly corresponding to the country-of-origin variables added in the previous robustness analysis. Thus, we expand the baseline model by adding: married, never married, religious, Muslim, the degree of social trust, the degree to which one finds it important to make own decisions and be free, the degree to which one finds it important to follow traditions and customs and disagreement with the statement that men should have more right to a job than women when jobs are scarce. In Tables A5 and A6 in the Online Appendix, we add them altogether in the first case and one by one in the second case. The tables suggest that our tolerance indicator is almost fully robust to the inclusion of this battery of additional individual-level control variables – the exception is Cultural integration. In the latter table, Tolerance (country of origin) is strongly statistically significant in all regressions. Quite a few of the new individual controls are significant here as well, and mostly with the expected sign. These results overall strengthen our basic starting point, that cultural traits among immigrants are important for integration. Notably, tolerance retains its position as a strong explanatory factor.

Third, we add the available individual-level control variables for the parents of the respondents, whether they have a university degree, whether they were working when the respondents were 14 years old and dummy variables for their occupation. It could be that these are correlated with tolerance in their countries of origin and that tolerance primarily reflects parental education and work experience. The results are reported in Table A7 in the Online Appendix. The results show that the tolerance estimates remain significant throughout as the parental controls are included. The main relationship with integration is for the parents having a university education, which is positively related to economic and civic integration, and the father having worked when the respondent was 14.

Table 3

Results for integration when adding two institutional and five cultural variables from the country of origin.

Dependent variables →	Integration	Economic integration	Civic integration	Cultural integration
Tolerance (country of origin)	0.0435*** (0.0142)	0.0258* (0.0144)	0.0599** (0.0254)	0.0788*** (0.0284)
Log real GDP per capita (country of origin)	-0.0798*** (0.0168)	-0.0728*** (0.0185)	-0.125*** (0.0280)	-0.0465* (0.0272)
Democracy (country of origin)	-0.00409 (0.00321)	-0.0104*** (0.00275)	0.00277 (0.00430)	0.00359 (0.00534)
Rule of law (country of origin)	0.0344** (0.0149)	0.0153 (0.0146)	0.109*** (0.0210)	0.0331 (0.0208)
Share of religious persons (country of origin)	-0.0242 (0.0459)	0.0321 (0.0374)	-0.0563 (0.0881)	0.0600 (0.0711)
Individualism (country of origin)	0.105** (0.0437)	0.142** (0.0603)	0.153* (0.0878)	-0.116 (0.0807)
Social trust (country of origin)	0.160** (0.0674)	0.147** (0.0616)	0.340** (0.138)	0.0902 (0.112)
Share of Muslims (country of origin)	-0.132*** (0.0278)	-0.173*** (0.0404)	0.0364 (0.0478)	-0.197*** (0.0652)
Female labor participation rate (country of origin)	0.189** (0.0907)	0.146 (0.0963)	-0.227 (0.160)	0.424** (0.164)
Age	0.0224*** (0.00276)	0.0179*** (0.00271)	0.0351*** (0.00232)	0.0213*** (0.00621)
Age squared	-0.0238*** (0.00271)	-0.0229*** (0.00294)	-0.0310*** (0.00256)	-0.0225*** (0.00575)
Female	0.0291** (0.0112)	0.0190 (0.0183)	-0.0175 (0.0190)	0.0835*** (0.0121)
Constant	0.145 (0.187)	0.299 (0.184)	0.220 (0.297)	-0.240 (0.327)
Observations	7476	8212	11,133	10,668
R-squared	0.211	0.183	0.160	0.194

Notes: Robust standard errors in parentheses, which are clustered on the parent's birth country. The regression includes region-of-residence by ESS-wave fixed effects.

*** $p < 0.01$.

** $p < 0.05$.

* $p < 0.1$.

The exercise lends further credence to tolerance being a factor of importance for integration.

Fourth, the sample size by country of origin is specified in Table A2 in the Online Appendix. The most notable thing is that Russia is quite strongly represented, with 1578 respondents being of Russian ancestry. However, an outlier test based on the baseline model in Table 2 with Russia removed from the sample is presented in Table A8 in the Online Appendix. It shows that the results are robust.

Our fifth exercise involves investigating whether the results change when the employment variable that forms part of Economic integration is changed. For this exercise, we use three measures: (i) the baseline measure, where Economic integration consists of income, higher education and self-employment; (ii) a new measure, where Economic integration consists of income, higher education and employment; and (iii) a new measure, where we combine the first two measures and where Economic integration consists of income, higher education, self-employment and employment. We present the findings in Table A9 in the Appendix. They show that it does not really matter whether we use employment, self-employment or both. In all cases, Tolerance is positively related to Economic integration at the 1% significance level.

We continue by constructing two alternative Tolerance measures. While the baseline measure consists of two variables (the share that thinks that homosexuality can be justified and the share that considers it important to teach children tolerance), we add three further indicators of tolerance from the countries of origin: first, the shares that do not pick "people of a different religion" and who do not pick "unmarried couples living together" when asked which groups they do not want to have as neighbors (which, when added to the baseline measure, forms the new variable Tolerance4); then also the shares that do not pick "people of a different race" (which, when added to Tolerance 4, forms the new variable Tolerance5). The idea is to see whether broader measures of tolerance predict integration. As can be seen in Tables A10a,b in the Online Appendix, the two broader measures predict Integration, Economic integration and Cultural integration just as well as our baseline measure; however, for Civic integration, these broader measures are not statistically significant. Thus, it seems as if our baseline indicator captures the features of tolerance that relates to Civic integration better than the wider measures, but otherwise all three measures are clearly positively related to integration.

Seventh, there is a potential issue of selection, such that the country-of-origin tolerance levels are quite different from the tolerance levels of the parents of our second-generation immigrants who migrated from those countries. What we can do empirically is to use the ESS tolerance indicator of the degree to which one wants gays and lesbians to be free to live life as they wish and compare the average tolerance of today's natives (who have not emigrated) in each country of origin with the average tolerance of the first-generation emigrants from the same country living in our sample of European countries of residence. This is not a perfect test, since it does not involve the parents of our sample of second-generation immigrants, but it is still indicative of whether people who migrate differ

from those who remain in the dimension of interest. The relationship is depicted in Fig. A2 in the Online Appendix, with the ratio between the average tolerance among emigrants from various countries and the average tolerance among the natives (who have not emigrated) from the same countries on the Y axis and the average tolerance among the natives (who have not emigrated) from the same countries of origin on the X axis. A ratio of 1 means that the tolerance levels are the same, a ratio >1 that the tolerance of emigrants is higher and a ratio <1 that the tolerance of natives is higher. In the countries of origin where the tolerance of natives is relatively high (above 3.5 or so), the ratio is close to 1, indicating that emigrants are quite representative of the people who have remained in the home country. For lower tolerance levels among natives, the ratio >1 , which suggests that emigrants are more tolerant. Notably, this kind of unrepresentativeness speaks in our favor, since it shows that when emigrants and natives differ, it takes the form of emigrants being more tolerant than natives. This means that we may underestimate the effects of tolerance on integration by using the tolerance of the natives who stayed behind in our regressions. Based on this test, the issue of selection does not seem to be of grave concern as the bias is arguably towards zero.

4.3. Extended analyses

We next perform five extended analyses, to gain a richer understanding of the character of the tolerance–integration relationship. First, we restrict the sample to second-generation immigrants whose parents were born in a European country but in a different one than the one the second-generation immigrants themselves were born in and reside in. The idea behind this exercise is that we create a sample with more homogeneous countries of origin, thus reducing the risk for outlier influences. Moreover, it could be that integration is generally easier for European immigrants and that factors like tolerance matter less for various reasons. It is certainly the case that there is less variation in tolerance within Europe. However, the results are very similar, as can be seen in Table A11 in the Online Appendix.¹⁹

Second, we have undertaken an analysis for second-generation immigrants where both parents are immigrants – see Table A12 in the Online Appendix. This entails using a considerably smaller sample. Yet, the results are similar to our baseline results, the main difference being that the point estimates for Tolerance (country of origin) is clearly larger, arguably due to a stronger vertical cultural transmission from Tolerance in the country of origin to the individual's tolerance if both parents are immigrants. The somewhat weaker effect on cultural integration may be understood as a higher likelihood of speaking a second language at home if both parents are immigrants.

Third, we remarked above that previous work on integration has studied the role of natives being tolerant. What happens to our results when we take the tolerance of natives into account? We do so by using a question in the ESS capturing the degree to which respondents wish to allow immigrants of different race/ethnic groups than the majority. We consider this the most suitable indicator of tolerance for this exercise, since it directly affects a willingness to let immigrants into different spheres of society. When interacting Tolerance (country of origin) with this new measure, Tolerance (country of residence), the interaction variable does not attain statistical significance except for Economic integration, where the positive point estimate of Tolerance (country of origin) is reduced a bit as Tolerance (country of residence) goes up. This suggests that the economic benefits for immigrants stemming from a tolerant background culture is smaller when there is already tolerance among natives, indicating substitutability. For details, see Table A13 in the Online Appendix. For the other outcomes, there seems to be neither substitutability nor complementarity between the tolerance of the second-generation immigrants and the tolerance of the native population in the country where all of them reside. Tolerance (country of origin) can thus, also after this exercise, be seen to be positive for integration, irrespective of the tolerance of the natives.

Fourth, one might wonder what the role of discrimination in the country of origin is in relation to integration. It is reasonable to see the absence of discrimination (which is an action or state of affairs) as conceptually and perhaps empirically related to tolerance (which is a social attitude). Two separate issues involving discrimination are worth considering. The first one is whether discrimination in the country of origin rather than (in)tolerance affects integration. The second one is whether a tolerant background implies less discrimination in the region of residence. To test whether discrimination influences integration, we have replaced Tolerance with two indicators of discrimination: the Gay Travel Index and the Global Index on Legal Recognition of Homosexual Orientation (as described in the data section above). This exercise reveals (see Tables A14a,b in the Online Appendix) that these measures attain statistical significance in a few cases, but only for Civic integration do they both attain it, indicating that laws that do not discriminate against the gay minority in the background country is related to more civic-political engagement in the country of residence. However, Tolerance retains its clear statistical significance and a substantive size effect throughout, even when the two non-discrimination indicators are included and when, in the case of Civic integration, they are statistically significant. We also offer an empirical test of whether tolerance in the country of origin of the second-generation immigrants is related to being a member of a group that has been discriminated against in the country of residence. The latter are individual-level data from the ESS. Our hypothesis is that a second-generation immigrant from a more tolerant background is less likely to have experienced discrimination. Admittedly, this exercise is not perfect, both because the discrimination measure refers to some group the respondent belongs to rather than personal experience and because the link between discrimination and integration need not be very strong. Yet, as reported in Table A15 in the Online Appendix, we find that there is, as hypothesized, a negative relationship between tolerance in the country of origin and the outcome

¹⁹ We do not include regressions for the sample where both parents have non-European countries of origin, since the number of observations is very low (ranging from 296 to 442, depending on the outcome studied). However, we have undertaken the regressions, and the results are qualitatively in line with those for the European sample, with all estimates being positive (and larger) and with statistical significance for Integration, Economic integration, and Civic integration.

variable being a member of a group that has been discriminated against in the country of residence, and it is statistically significant at 5%.

Fifth, we have separated male and female second-generation immigrants (the individuals whose integration we study). The results, which can be found in Table A16 (for females) and Table A17 (for males) in the Online Appendix, mainly remain the same, but we find no indication of clear gender differences. For both female and male second-generation immigrants, background-country tolerance is positively related to all types of integration.

5. Concluding remarks

The challenge of integration is real in countries with many and increasing numbers of immigrants – certainly in the economic realm, where earning an income is a key feature of a good life, but also, in times of polarization, in the political and cultural realm. For society to develop harmoniously, its various groups of inhabitants arguably need to participate in markets, democratic life and be connected to the cultural fabric.

In this study, we have investigated a hitherto overlooked cultural predictor of integration: tolerance. Unlike previous work, that looks at the “demand” side, i.e., the attitudes and related behavior of natives towards immigrants, we look at the attitudes of the immigrants themselves. We investigate how tolerance in their ancestral culture affects economic, civic-political and cultural integration and find ample indications of a positive influence in all three dimensions. By using the epidemiological method, measuring tolerance in the countries from which parents of second-generation immigrants in Europe migrated and assuming transmission via the family, the results do not suffer from reverse causality.

We find that tolerance in the background culture is clearly associated with economic, civic-political and cultural integration. The findings withstand a number of sensitivity tests and extensions, making us confident that we identify a robust effect.

Our results may be taken to suggest that strengthening tolerance is a virtuous matter, not only for those who value it for its own sake but also from the point of view of those who strive for integration. How, then, can tolerance be strengthened? As a cultural characteristic, it is embedded in traditions, making it hard to consciously change it, but there are certain findings that offer some hope for change. One thing that seems promising is contact-based interventions that make people more familiar with and knowledgeable about others after personal contacts (Lemmer and Wagner, 2015). There are also signs of education playing a positive role, both through increasing knowledge and through socialization involving people who are different (Vural-Batik, 2020). Moreover, certain institutional reforms appear able to generate tolerance, such as a stronger rule of law (Berggren and Nilsson, 2013; Berggren et al., 2019) and social and economic globalization between countries (Berggren and Nilsson, 2015).

Even though our findings are novel and policy-relevant, they do not, of course, exclude other measures or insights, shown by previous research to foster integration. Still, we consider it valuable to have identified a new factor that seems to affect the important process of making everyone partake in economic, political and cultural life.

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Supplementary materials

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