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Do international tourist arrivals change residents' attitudes towards immigration? A longitudinal study of 28 European countries

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Abstract

Can international tourist arrivals change residents' attitudes towards immigrants and immigration? We discuss possible underlying mechanisms and provide the first evidence on this question using data from the European Social Survey (2002–2019; n=333,505). We find that, as tourist arrivals grow, residents become more positive towards immigration in Eastern Europe. In Western Europe, the relationship tends to turn from positive to negative at relatively high levels of tourism. The instrumental variable analysis suggests that incoming tourism has a positive *causal* effect on attitudes towards immigration in both Western and Eastern Europe. Overall, our study reveals an overlooked dimension of the tourism-migration nexus and highlights the role that international tourism may play in shaping attitudes towards immigration and, through these attitudes, immigration policy and flows, immigrant integration and more open and inclusive societies in tourism-receiving countries.

Keywords

tourism, attitudes towards immigration, inclusion, Europe, instrumental variable analysis

Introduction

It is well documented that tourism and migration reinforce each other. On the one hand, migration stimulates tourism: migrants' friends and relatives visit migrant-receiving and migrant-sending countries (Dwyer et al., 2014; Etzo et al., 2014; Griffin and Dimanche, 2017; Santana-Gallego and

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Paniagua, 2020; Seetaram, 2012) and migrants, as well as their descendants born in the host country, engage in diaspora tourism (Adams, 2020; Li and Chan, 2020; Otoo et al., 2021). On the other hand, tourism stimulates migration: growth in tourism creates labour shortages that businesses fill with migrant labour (Gössling and Schulz, 2005; Janta et al., 2011; Joppe, 2012; Williams and Hall, 2000) and people travelling for holidays, study or business settle in the country they visit and, thus, become immigrants (Gheasi et al., 2011; Haug et al., 2007; Oigenblick and Kirschenbaum, 2002; Williams and Hall, 2000). Furthermore, migration and travel are closely related through their contribution to international trade and foreign direct investment (Genç, 2014; Gheasi and Nijkamp, 2017; Poot, 2015). While these contributions paint a complex picture of the links between tourism and migration, one aspect of the nexus has remained overlooked: the relationship between tourist arrivals and residents' attitudes towards immigrants and immigration. The objective of our study is to fill this knowledge gap and address the following question: Do international tourist arrivals make people in host countries more or less favourable towards immigrants coming to live and work there?

There are several reasons why it is important to answer this question. First, attitudes towards immigration are a key ingredient of immigration policy formation, as people vote for political parties that represent their views on immigration and adopt corresponding immigration policies (Facchini and Mayda, 2008). For example, popular anti-immigration sentiment has been closely related to the rise of the political far-right (Allen, 2017) and the 2016 vote of the British people to leave the European Union (Ivlevs and Veliziotis, 2018). Attitudes towards immigration have also been shown to affect actual immigration flows (Gorinas and Pytliková, 2017), as well as immigrant integration in host societies (Fussell, 2014). For all these reasons, it is important to understand whether tourist inflows affect people's attitudes towards immigration and, through these attitudes, provide ground for populist parties, shape immigration policies, affect migrant flows, foster immigrants' integration and, more generally, contribute to more open, inclusive and cohesive societies in tourist destination countries.

Conceptually, there are at least two ways in which tourist inflows may affect immigration attitudes of people in tourist receiving countries. First, tourism may lead to the growth of local and national economies, opportunities for entrepreneurs, and also shortages of labour in sectors catering to tourist demand. If local people are unable or unwilling to fill these labour shortages – and rather prefer to take advantage of the entrepreneurial opportunities brought about by tourism – they may become more open to immigration. Second, encounters with tourists can make residents more open to other cultures which, among other things, could contribute to more positive attitudes towards immigration. We discuss these theoretical channels and then test for the *net* effect of international tourist arrival rate (TAR)s on residents' immigration preferences, using data from the European Social Survey (ESS) for 2002–2019. Specifically, we undertake a panel-data, country-fixed-effects analysis to find out if hosts' attitudes towards immigration change over time with the intensity of international tourist arrivals. Furthermore, we delve into the causal effects of international tourist arrivals on attitudes towards immigration by performing the instrumental variable analysis, where tourist arrivals are predicted with seasonal climate conditions in the destination countries and the occurrence of international sporting events.

Our results show that international tourist arrivals have a statistically significant and positive association with hosts' attitudes towards immigration in Eastern Europe. In Western Europe, the relationship tends to take an inverted U-shape: attitudes towards immigration improve with tourist arrivals up to a certain – relatively high – level of tourism, and decrease thereafter. The instrumental variable analysis reveals a positive *causal* effect of international tourist arrivals on attitudes towards immigration in both Western and Eastern Europe.

Our paper contributes to the large body of knowledge on the links between tourism and migration. So far, this literature has focused on actual tourist and migrant flows (see, e.g., Provenzano (2020), Poot (2015), Santana-Gallego and Paniagua (2022) and Seetaram (2012)). By focusing on attitudes towards immigration, we provide novel – both correlational and causal – evidence on a so far overlooked dimension in the tourism-migration nexus.

The remainder of the paper is organised as follows. *Theoretical Framework* Section outlines theoretical channels through which tourist arrivals might affect hosts' attitudes towards immigration. *Methods* Section presents the data, variables and estimation strategy. *Results* Section presents the results, followed by a discussion and conclusion.

Theoretical framework

One can conceive of two mechanisms – stemming from the fields of political economy and social/political psychology – through which tourist arrivals may affect hosts' attitudes towards immigration. They are related to (1) local economic development, business opportunities, the need for labour, and competition for jobs; and (2) contact with tourists and emotions, and their projection onto immigrants. In this section, we outline the theoretical underpinnings and intuition behind the two channels and discuss how the intensity of tourist flows may affect their strength.

Economic development, labour shortage, business opportunities, and competition for jobs

One of the key theoretical approaches explaining attitudes towards immigration stems from the broad field of political economy and posits that labour market competition – real or perceived – drives attitudes towards immigration (see e.g. Mayda, 2006; Hainmueller and Hopkins, 2014; Kunovich, 2017). Emphasising material self-interest, this theoretical framework predicts that people competing with immigrants on the labour market will be more anti-immigration, while people who benefit from immigration (i.e, people whose skills are complementary to those of immigrants) will be more pro-immigration. If tourism generates a need for immigrants, it will potentially expose 'winners' and 'losers' from immigration within the host society and, consequently, shape their attitudes towards immigration.

Does tourism increase a demand for immigrants? It is widely acknowledged that the growth of tourism generates opportunities for businesses and economic growth (Ateljevic and Page, 2009; Croes et al., 2021; Mayer and Vogt, 2016). The hospitality sector is a primary beneficiary, but other industries directly or indirectly catering to tourist demand also benefit (Cai et al., 2006; Lin et al., 2019). To grasp profitable opportunities, people in host countries must set up new businesses or expand existing ones: open hotels and restaurants, produce more local food, provide more transportation services etc. Entrepreneurs and managers in charge of these tasks will soon realise the need for more labour, such as hotel staff, waiters, and agricultural workers. In many developed countries, the supply of workers willing to do such jobs is scarce and employers may find it difficult to fill these jobs with local workers. Raising wages may be a solution but few employers would embrace such a measure. An easier solution is to recruit immigrants, who represent a source of relatively cheap labour and are ready to take up jobs that are often considered undesirable or low-status by locals. Migrants indeed play an important role in supporting tourism-related industries in many countries (Janta et al., 2011; Joppe, 2012; Kim et al., 2016; Williams and Hall, 2000; Zopiatis et al., 2014).

From this perspective, people who are ready and able to take advantage of profitable opportunities (existing and aspiring entrepreneurs, Airbnb owners etc.) should become more favourable to immigration as tourist arrivals grow. At the same time, there may exist a category of residents who think that wages in industries supporting tourism would be higher, and the corresponding jobs more attractive, if immigrants were not there. These people – migrant competitors – could become less favourable to immigration as tourist numbers grow.

Contact with tourists, psycho-emotional wellbeing and attitudes towards immigration

A growing literature in social and political psychology offers a theoretical framework and evidence that emotions and psychological well-being shape political tolerance, open-mindedness and attitudes towards outgroups, such as immigrants and refugees (Hainmueller and Hopkins, 2014; Tenenbaum et al., 2018; Korol and Bevelander, 2021; Welsch et al., 2021.) This approach argues that negative life experiences worsen attitudes toward outgroups, while positive experiences and greater psychological wellbeing have an opposite effect (Korol and Bevelander, 2021). The underlying mechanisms include affect misattribution, whereby our judgements, beliefs and orientations, especially when they concern unfamiliar groups, are informed by unrelated feelings (Tenenbaum et al., 2018). Experimental evidence shows that incidental emotions, such as happiness and fear, affect attitudes towards asylum seekers (Tenenbaum et al., 2018), and a growing literature suggests that greater life satisfaction – a key manifestation of subjective/psychological well-being – goes hand in hand with more positive stance towards immigrants (Korol and Bevelander, 2021; Welsch et al., 2021).

How does this discussion relate to tourism? There exists a strong argument, and accompanying evidence, that tourist arrivals affect hosts' psychological wellbeing. The feelings are likely to range from euphoria and excitement to apathy, annoyance and antagonism (Okulicz-Kozaryn and Strzelecka, 2017). Contact with tourists is one of the key underlying mechanisms for such emotional responses. For residents, the contact can be direct (helping tourists with directions, taking photos, welcoming tourists to an Airbnb, working in tourism industries) or indirect/unintentional (observing tourists, learning about tourists from the news and media). Crucially, the contact can also be positive (feeling good about being able to help and using foreign language skills; feeling proud that tourists show interest in local landmarks) or negative (seeing/learning about drunk tourists misbehaving) (Cheng and Zhang, 2019; Fan et al., 2020; Kim et al., 2020; Luo et al., 2015; Nikjoo and Bakhshi, 2019; Tait, 2019; BBC, 2009). Ivlevs (2017) and Okulicz-Kozaryn and Strzelecka (2017) argue that such encounters with tourists affect hosts' life satisfaction and show – for European countries and regions, respectively – that excessive tourist arrivals leave hosts less satisfied with life.[1]

Taken together, these literatures suggest that tourist arrivals affect hosts' attitudes towards immigration through changes in psychological well-being. In essence, emotional responses from positive and negative contact with tourists are projected onto immigrants. Having a positive contact may thus contribute to a more open, cosmopolitan worldview of residents[2] and they may start seeing immigrants – or anyone/anything foreign – in a more positive light; the opposite will be true if the contact is negative.

In addition, in some contexts, residents may be well aware that today's tourists are tomorrow's immigrants. In this case, contact with tourists can be directly projected onto perceptions of immigrants. For example, contact with British tourists at a Spanish holiday resort may affect Spaniards' attitudes towards British immigrants – people buying houses and settling in Spain. Furthermore, some tourists may come to a country to visit their friends and relatives who immigrated there earlier (Dwyer et al., 2014; Etzo et al., 2014; Griffin and Dimanche, 2017). Besides

staying in the area where immigrants live, such tourists may take the opportunity to visit landmarks of the country further afield. Even if residents do not live in the same areas as immigrants, residents can still come into contact with tourists from the same country and project that contact onto immigrants. Tourists can thus inform residents about immigrants, and contact with tourists will be directly projected onto immigrants and help shape attitudes toward them.

Intensity of tourist flows

Consistently with the tourism development cycle hypothesis (Butler, 1980), it is possible that the strength of both the labour-market competition and the contact/psycho-emotional channels varies according to the intensity of tourist inflows. Consider the employment channel. In countries with incipient tourist inflows entrepreneurs may still be able to employ local labour to take advantage of the emerging business opportunities. As tourist arrivals grow and the supply of local labour dries up, the interest in, and the acceptance of, foreign labour may increase. However, at very high levels of tourist inflows, business opportunities may be exhausted and the appeal of employing immigrants might go down. Following this reasoning, attitudes towards immigration should be growing with the TAR up to a certain point and decrease thereafter – at least among people ready and able to take advantage of the business opportunities associated with tourism. By the same token, local workers competing with immigrants should develop a greater anti-immigrant sentiment as tourist inflows grow, but also up to a point.

A similar non-linear relationship can be conceived for the contact channel. When tourist arrivals are low, the locals may be enjoying contact with tourists. When tourism intensity grows, the problems associated with tourism may come to the fore, outweighing any positive impressions, as manifested by hosts' complaints in areas with excessive tourist numbers (Lowrey, 2019). Ivlevs (2017) and Okulicz-Kozaryn and Strzelecka (2017) use similar reasoning to explain why hosts' life satisfaction decreases when the intensity of tourist arrivals is particularly high. If feelings about tourists are projected onto immigrants, we may expect that attitudes towards immigration improve with tourist arrivals up to a certain point and worsen thereafter.

Based on the discussion above, we want to test whether hosts' attitudes towards immigration changes as tourist arrivals grow. Furthermore, we want to test if the relationship between attitudes towards immigration and tourist arrivals depends on the intensity of tourist arrivals. Note that, due to data limitations, we are only able to provide a test for the *net* effect of tourist arrivals on attitudes immigration; we elaborate on ways in which future research could disentangle individual theoretical channels in the discussion section.

Methods

General model specification

Our aim is to estimate the net effect of country-level tourist arrivals on individual attitudes towards immigration in tourist receiving countries. The general model can be expressed as follows:

$$\begin{aligned} Attitudes\ towards\ immigration_{i,j,t} = {} & \beta_0 + \beta_1 tourist\ arrival\ rate_{j,t} + \\ & \beta_2 individual - level\ controls_{i,j,t} + \\ & \beta_3 countrylevel\ controls_{j,t} + \\ & \beta_4 countryfixed\ effects_j + \\ & \beta_5 yearfixed\ effects_t + \\ & error\ term_{i,j,t} \end{aligned} \quad (1)$$

where *attitudes towards immigration* of individual i living in country j in year t are modelled as a function of country-level tourist arrivals (which change yearly), typical individual-level determinants of attitudes towards immigration (age, gender, education, income, political leaning etc.), and country-level variables, such as GDP growth and unemployment rates (which change yearly). Given the repeated-cross-section structure of the data that we will use in our analysis (interviews are conducted in several countries over several years, see *Data Sources* Section), the model includes indicator variables for all countries (country-fixed effects) and years (year-fixed effects). Country-fixed effects account for all time-invariant, country specific factors potentially affecting both attitudes towards immigration and tourist inflows. Year-fixed effects account for the time trends in attitudes towards immigration and tourist inflows which are common for all countries included in the analysis. This specification should thus reveal the relationship between the within-country change in international tourist arrivals and the change in average attitudes towards immigration, controlling for individual characteristics, time-variant and time-invariant country characteristics and time trends.

Data sources

To estimate the models, we need data at both the individual and country level. Individual-level data come from the publicly available ESS, which is a cross-national survey of social values, norms, behaviours and attitudes conducted biannually in a range of European countries since 2002. Altogether 38 European countries participated in the first eight rounds (2002/03, 2004/05, … 2018/19) of the survey. Of these, 36 countries participated in at least two rounds, and 15 countries participated in all nine. The number of respondents varies from 579 to 3045 in each country-round and the total sample size is 421,075.

In each ESS country-round, respondents were selected using strict random sampling techniques, and the national samples are representative of the participating countries' resident populations aged 15 and older (with no upper age limit). Face-to-face interviews lasting approximately 1 hour were based on the ESS source questionnaire, which was designed in English and then translated into each language that is used as a first language by at least 5% of a participating country's population. All methods and procedures related to data collection and processing were standardised across the participating countries, to ensure the comparability of the resulting data. More information on the ESS design methodology, as well as the dataset itself, are available on the ESS project website http://www.europeansocialsurvey.org/.

The data on international tourist arrivals were sourced from the World Tourism Organization data repository.[3] The data on country-level control variables (unemployment, GDP growth etc.) were sourced from the World Bank World Development Indicators dataset. Finally, the data on immigration – another crucial country-level control variable – were sourced from Eurostat.

Variables

Dependent variable(s): Attitudes towards immigration. All ESS waves contain six standardised questions that we use to capture attitudes towards immigration. These questions are (emphasis added):

1) *To what extent do you think [country] should allow people of **the same race or ethnic group** as most of [country]'s people to come and live here?*
2) *To what extent do you think [country] should allow people of **a different race or ethnic group** from most of [country]'s people to come and live here?*
3) *To what extent do you think [country] should allow people from the **poorer countries outside Europe** to come and live here?*

Possible answers to questions 1–3 are: "Allow none", "Allow a few", "Allow some" and "Allow many" and are coded with values 1, 2, 3 and 4, respectively.

4) *Would you say it is generally bad or good for [country]'s **economy** that people come to live here from other countries? (Possible answers on a scale of 0 to 10, where 0 is "bad for the economy" and 10 is "good for the economy")*
5) *Would you say that [country]'s **cultural life** is generally undermined or enriched by people coming to live here from other countries? (Possible answers on a scale of 0 to 10, where 0 is "cultural life undermined" and 10 is "cultural life enriched")*
6) *Is [country] made **a worse or a better place** to live by people coming to live here from other countries? (Possible answers on a scale of 0 to 10, where 0 is "worse place to live" and 10 is "better place to live")*

The six questions allow the capture of different aspects of attitudes towards immigration (preference for different types of immigrants, perceptions of immigration effects on different life domains). We use all six questions in the analysis and, as they are correlated (Cronbach's $\alpha = 0.83$), also create an index of pro-immigration attitudes using the first factor of the principal component analysis (the Eigenvalue of which is 3.802; the Eigenvalue of the second component is 0.921). Higher values of the index correspond to more positive attitudes towards immigration.

Main regressor: Tourist arrivals. Tourist inflows are captured by the annual arrivals of international tourists, defined as those "who travel to a country other than that in which they usually reside, for a period not exceeding 12 months and whose main purpose in visiting is other than an activity remunerated from within the country visited." The data are sourced from the United Nations World Tourism Organization, and to ensure comparability between countries, tourist arrivals are expressed as a percentage of the host country population in the same year (population data from World Development Indicators). The average TARs and their range (maximum and minimum) for the countries included in the analysis can be found in Table S1 of Supplementary Information.

Individual-level controls. Following the empirical literature on the micro-determinants of attitudes towards immigration (see e.g. Mayda, 2006, and Ivlevs, 2012), all estimations include the following individual-level controls: age (in years), years of completed education, indicator variables for gender, four household income levels (low, medium and high – corresponding to the three within-country household income tertiles – and an indicator variable for non-reported income), four

subjective evaluations of household income (living comfortably on present income, coping on present income, difficult on present income, and very difficult on present income), being unemployed and actively looking for a job, being unemployed and not looking for a job, political affiliation (left, centre, right, no answer), degree of religiousness, being an immigrant (not born in the country), having immigrant parent(s), and five degrees of urbanisation (living in a big city, suburbs or outskirts of a big city, town or small city, country village, and farm or home in the countryside). The summary statistics of all the variables included in the analysis, as well as the survey questions used to construct them, are reported in Table S2 of Supplementary Information.

Country-level controls. Controls are included for several country-level variables and major events that may have affected residents' attitudes towards immigration (Hainmueller and Hopkins, 2014), tourist arrivals (Martins et al., 2017), or both. These variables are: the GDP growth rate and GDP per capita,[4] the unemployment rate, the immigration rate and its square, and the occurrence of a terrorist attack in the year of the interview or the year before.

Estimation strategy

Given the categorical and ordered nature of the six questions capturing attitudes towards immigration, we estimate Equation (1) with ordered logit. Where the dependent variable is the pro-immigration attitudes index, we use OLS.

Concerning the temporal structure of the data, the ESS is conducted biannually, with each round taking place over a 2-year span. It is possible to identify in which year a particular interview was conducted, and this information reveals that within several country-rounds the interviews were conducted in both years of the round. For example, looking at the respondents from Belgium in ESS Round 5 (2010/11), 47% were interviewed in 2010 and 53% in 2011. This effectively increases the temporal variation of the data, which is why we relate residents' attitudes towards immigration to international tourist arrivals in a particular year (rather than over the span of 2 years).

To test whether the effect of tourism depends of the intensity of tourist arrivals, we add to the baseline model the square of the TAR:

$$\begin{aligned} Attitudes\ towards\ immigration_{i,j,t} = {} & \beta_0 + \beta_1 tourist\ arrival\ rate_{j,t} + \\ & \gamma_1 tourist\ arrival\ rate^2_{j,t} \\ & \beta_2 individual - level\ controls_{i,j,t} + \\ & \beta_3 countrylevel\ controls_{j,t} + \\ & \beta_4 countryfixed\ effects_j + \\ & \beta_5 yearfixed\ effects_t + \\ & error\ term_{i,j,t} \end{aligned} \tag{2}$$

All estimations include both the design weight and the population weight, as recommended by the ESS architects. Given that individual-level outcomes are explained by country-level variables, we always cluster the standard errors at the country level. Finally, given that the ESS survey includes both Western and Eastern European countries, we will estimate our main models for the whole sample as well as separately for the two groups. Western European countries have a long history of both tourist and immigrant inflows, while the post-Socialist countries of Central and Eastern Europe opened in the early 1990s and have since witnessed relatively smaller, albeit growing, inflows of tourists and immigrants. We therefore want to see if there are differences in the relationships of

interest between the two. Our Eastern European group includes only the countries of the former Socialist bloc that joined the EU in or after 2004 (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, Slovakia); we therefore exclude Israel, Russia, Turkey and Ukraine from the analysis.

Estimating causal effects. It is important to note that, when estimated with ordered logit or OLS, the coefficient of interest (β_1 in Model 1) should be interpreted as a conditional correlation rather than causal effect. While we include a broad range of potential country-level confounding variables as controls, there may still be some omitted variables driving both attitudes towards immigration and tourist arrivals. To mitigate possible endogeneity issues and move closer to causal effects, we use the instrumental variable approach (for the application of this method in tourism studies see, e.g., Ivlevs, 2017). This method relies on the availability of instruments – variables that are highly correlated with the endogenous regressor (tourist arrival rate) and that affects the outcome variable (residents' attitudes towards immigration) only through this endogenous regressor. If satisfactory instruments can be found, the instrumental variable estimation consists of two stages: (1) in the first stage, the TAR is regressed on the instruments and all the control variables, and (2) in the second stage, the predicted values of the first stage dependent variable are used as a regressor, alongside all the control variables. The standard F test of the excluded instruments is used to test their relevance.

We use climatic conditions of the tourist destination countries as instruments for the international TAR. Specifically, we use the cumulative seasonal (spring, summer, autumn, winter) temperature and precipitation in the year of the interview to predict tourist arrivals (December of year *t-1* is part of winter of year *t*). Consistently with the literature (Amelung and Viner, 2006; Becken and Wilson, 2013; Denstadli et al., 2011; Otrachshenko and Nunes, 2021; Wilkins and De Urioste-Stone, 2018), we expect that the climatic conditions of a country – hotter, colder, rainier, drier seasons – will be good predictors of the number of international tourists going there (instrument relevance). At the same time, one can reasonably assume that climatic conditions have no direct influence on residents' attitudes towards immigration (instrument exogeneity). As an additional instrument, we use some major international sporting events: the Olympic Games as well as the World and European Football Championships. Theoretically, such events can either increase or reduce international tourist arrivals (event-specific tourism vs displacement/crowding-out effect, see e.g. Fourie and Santana-Gallego (2011)), but we have no particular expectation that they will have a direct effect on attitudes towards immigration.

Results

Correlational results

Figure 1 shows the evolution, across the ESS waves, of the means of the variables of interest – the TAR and attitudes towards immigration – for the whole sample of Western and Western European countries. Both variables have an upward trend, albeit with a noticeable reduction in the aftermath of the global economic crisis. This very simple descriptive analysis would suggest that there is a positive association between TARs and more favourable attitudes towards immigration, although the relationship could be driven by a time trend.

Table 1 reports the econometric results for the full sample, as well as for the sub-samples of Western and Eastern European countries. We only report the estimates of the variable of interest (tourist arrival rate); complete econometric output can be found in the Supplementary Information document. The results for the full sample (Panel A) suggest that there is no association between the

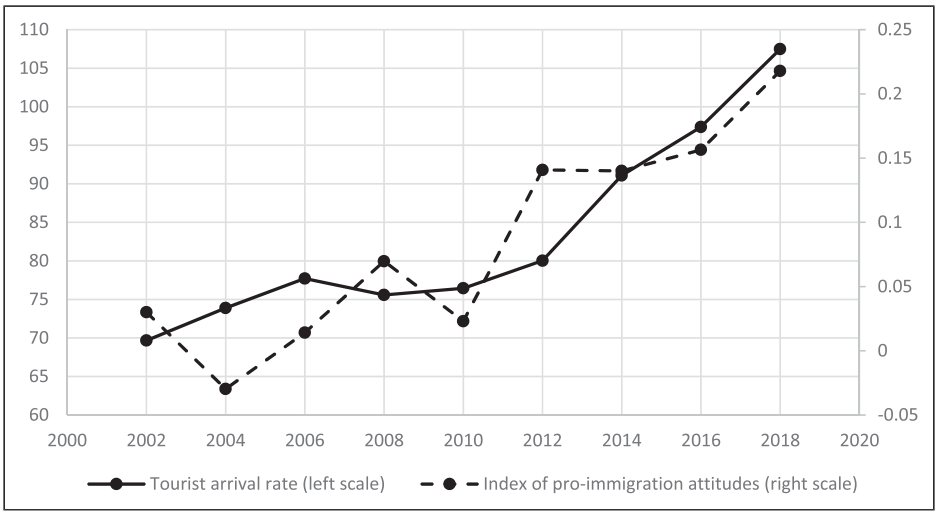

Figure 1. Whole-sample average of tourist arrival rate and index of pro-immigration attitudes by ESS wave. Source: Authors' calculations and presentation based on ESS data. The graph shows weighted averages of the two variables.

TAR and any of the variables capturing attitudes towards immigrations: all estimates are statistically insignificant and close to zero.

The picture is similar for Western European countries (Panel B of Table 1): all the estimated coefficients of the TAR are statistically insignificant. In the sample of Eastern European countries (Panel C of Table 1), the estimates are larger, both in terms of magnitude and statistical significance. In this group, greater international TARs are positively and significantly (at the 95% level) correlated with the respondents' willingness to allow immigrants of various backgrounds to live and work in their country (Columns 1–3), as well as with the index of pro-immigration attitudes (Column 7). The association between the TAR and the perceived effects of immigration on economy, culture and life a whole is statistically non-significant (Columns 4–6).

Next, we test for a possible quadratic relationship between the TAR and attitudes towards immigration (Table 2). For the whole sample (Panel A), the TAR and its square are both statistically insignificant in all specifications. In the sample Western European countries (Panel B), both variables are statistically significant in the specification explaining respondents' willingness to allow immigrants of the same race/ethnicity (Panel B, Column 1). The positive coefficient of the TAR and the negative coefficients of its square imply an inverted U-shaped relationship, with the inflection point occurring at 316 tourist arrivals per 100 residents per year. This is a very high level (there are only three countries in our sample – Austria, Cyprus and Iceland – where tourist arrivals exceeded it, see Table S2 of the Supplementary Information), meaning that for the vast majority of countries and respondents there is a positive, albeit with a decreasing gradient, relationship between tourist arrivals and residents' willingness to allow more immigrants of the same race/ethnicity.

As for Eastern Europe (Panel C of Table 2), the TAR and its square are never jointly statistically significant in the same specification, meaning that there is no non-linear relationship between the two variables.

Table 1. International tourist arrivals and attitudes towards immigration in Europe, 2002–2019.

	Allow more immigrants of same race	Allow more immigrants of different race	Allow more immigrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live	Index of pro-immigration attitudes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Full sample							
Tourist arrival rate	0.001	0.000	0.000	−0.002	−0.001	−0.000	−0.000
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	333,505	333,146	332,411	329,717	330,451	329,589	308,161
Pseudo R2/R2	0.0670	0.0737	0.0688	0.0377	0.0412	0.0412	0.223
C. Eastern Europe							
Tourist arrival rate	0.003	0.002	0.002	−0.001	0.001	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	242,620	242,529	242,209	241,180	241,847	242,343	228,911
Pseudo R2/R2	0.0774	0.0762	0.0683	0.0403	0.0435	0.0435	0.232
C. Eastern Europe							
Tourist arrival rate	0.004**	0.005**	0.005**	0.000	0.002	0.001	0.002**
	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(continued)

Table 1. (continued)

	Allow more immigrants of same race	Allow more immigrants of different race	Allow more immigrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live	Index of pro-immigration attitudes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Country and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	90,885	90,617	90,202	88,537	88,604	87,246	79,250
Pseudo R2/R2	0.0434	0.0876	0.0955	0.0277	0.0396	0.0396	0.238

Notes: The table reports the estimates of the tourist arrival rate from 21 country- and year-fixed-effects regressions that include individual and time-variant country-level controls. Robust standard errors, clustered at the country level, in parentheses. Models 1–6 are estimated with ordered logit, Model 7 is estimated with OLS. Individual controls include: age, gender, education, household income tertiles, subjective evaluation of household income, political orientation, unemployed not looking for a job, unemployed looking for a job, religiousness, born abroad, having immigrant parents and level of urbanisation. Country-level controls include: immigration rate and its square, GDP per capita, GDP growth, inflation rate, unemployment rate, a terrorist attack in the last 2 years. Western Europe (19 countries): Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, UK. Eastern Europe (10 countries): Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, Slovakia. Complete econometric output is available in Table A1 (A-C) of the Supplementary Information document.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 2. International tourist arrivals and attitudes towards immigration: quadratic relationship.

	Allow more immigrants of same race	Allow more immigrants of different race	Allow more migrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live	Index of pro-immigration attitudes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Full sample							
Tourist arrival rate	0.003	0.002	0.001	−0.001	−0.001	0.000	0.000
	(0.003)	(0.003)	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)
Tourist arrival rate squared/10000	−0.052	−0.041	−0.025	−0.028	0.009	−0.014	−0.016
	(0.059)	(0.057)	(0.065)	(0.037)	(0.036)	(0.033)	(0.026)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	333,505	333,146	332,411	329,717	330,451	329,589	308,161
Pseudo R2/R2	0.0670	0.0737	0.0688	0.0377	0.0412	0.0412	0.223
C. Eastern Europe							
Tourist arrival rate	0.007**	0.006**	0.006**	0.001	0.002	0.003**	0.003**
	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)
Tourist arrival rate squared/10000	−0.113*	−0.096	−0.109	−0.061	−0.039	−0.067	−0.048
	(0.059)	(0.061)	(0.067)	(0.051)	(0.051)	(0.041)	(0.030)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	242,620	242,529	242,209	241,180	241,847	242,343	228,911
Pseudo R2/R2	0.0775	0.0763	0.0684	0.0403	0.0435	0.0435	0.233
C. Eastern Europe							
Tourist arrival rate	0.004	0.008*	0.002	−0.002	−0.003	−0.000	0.001
	(0.004)	(0.004)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)

(continued)

Table 2. (continued)

	Allow more immigrants of same race	Allow more immigrants of different race	Allow more migrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live	Index of pro-immigration attitudes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Tourist arrival rate squared/10000	0.007	−0.049	0.058	0.037	0.106**	0.033	0.015
	(0.064)	(0.063)	(0.071)	(0.044)	(0.043)	(0.032)	(0.030)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	90,885	90,617	90,202	88,537	88,604	87,246	79,250
Pseudo R2/R2	0.0434	0.0876	0.0956	0.0277	0.0397	0.0396	0.236

Notes: The table reports the estimates of the tourist arrival rate and its square from 21 country- and year-fixed-effects regressions that include individual and time-variant country-level controls. Models 1–6 are estimated with ordered logit, Model 7 is estimated with OLS. Robust standard errors, clustered at the country level, in parentheses. See notes of Table 1, which also apply here. Complete econometric output is available in Table A2 (A-C) of the Supplementary Information document.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

All in all, the correlational results suggest that, other things being equal, higher inbound tourism rates are associated with more positive attitudes towards immigration in Eastern Europe. In Western Europe, the relationship takes an inverted U-shape for attitudes towards immigrants of the same race/ethnicity: they become more positive with tourist arrivals up to a point, and more negative thereafter; the inflection point, however, corresponds to very high levels of tourist arrivals (316 tourist arrivals per 100 residents) and the downward-sloping segment would only be observed in three countries in our sample.

Correlational results: Robustness and sensitivity checks

Before moving to instrumental variable results, we checked how robust and sensitive the results, reported in Tables 1 and 2 (henceforth, benchmark results), are different estimation methods and sub-samples. First, we estimated the models explaining different types of attitudes towards immigration with ordered probit and OLS, and the model explaining the index of immigration attitudes with the linear multilevel (mixed effects) approach. The results, presented in Tables A3a and A3b of the Supplementary Information are consistent with the benchmark results. Notably, the ordered probit results of the quadratic model for Western Europe provides additional support for the inverted U-shaped relationship between TAR and attitudes towards immigration (both the TAR and its square are statistically significant for three outcomes capturing attitudes towards different types of immigrants, as well as in the model explaining the statement "Immigrants make our country a better place to live"). The inflection points in these regressions remain relatively high, ranging from 250 to 303 tourist arrivals per 100 residents.

Second, we used the TAR of the previous year instead of its contemporaneous value; this exercise, among other things, could mitigate some of the endogeneity concerns. The results, presented in Table A4 of the Supplementary Information, are in line with the benchmark. Notably, we still find a statistically significant, positive association between the tourist arrival rate (at *t-1*) and attitudes towards different types of immigrants (at *t*) in Eastern Europe.

Third, we estimated our models on the sub-sample of countries that were included in all nine waves of the ESS, i.e. a balanced panel of countries (Table A5 of the Supplementary Information). The linear model suggests a positive relationship between attitudes towards immigration and the TAR in both Eastern and Western Europe. In Eastern Europe, where the results should be interpreted with caution as only three countries were included in the balanced-panel analysis, a U-shaped relationship between the variables of interest was obtained for the outcomes capturing attitudes towards different types of immigrants as well as for the immigration attitudes index (implying that attitudes worsen with tourist arrivals up to a certain point and improve thereafter); at the same time, the relationship is an inverted U-shape for the outcome capturing the assessment of immigration on country's economy.

Fourth, we estimated the models separately for high- and low-tourism intensity countries (i.e., for above and below the whole-sample median of 94 tourist arrivals per 100 residents). The results, reported in Table A6 of the Supplementary Information, reveal a negative association between the TAR and all outcomes capturing attitudes toward immigration in high-tourism intensity countries, echoing the downward-sloping segment of the inverted U-shaped relationship for Western Europe, while the estimates for the low-tourism-intensity countries tend to be statistically non-significant. Fifth, we checked if the relationship between the variables of interested is the same in Eurozone countries and non-Eurozone countries. The results, reported in Table A7 of the Supplementary Information, reveal an inverted U-shaped relationship between the TAR and all immigration attitudes outcomes, except the assessment of immigration for country's culture, in the Eurozone

countries. With the inflection points ranging from 170 to 320, and given the fact that the majority of the Eurozone countries in the sample are West European, the results provide further support for the negative association between the TAR and immigration attitudes when tourist intensity is high, especially in Western Europe.

Finally, we have performed the Brant test of parallel regression assumption for our ordered logit estimations and found that the assumption was violated. While such situations are not uncommon, we have estimated both the linear and quadratic models with the generalized ordered logit (Tables 3 and 4) and explored the corresponding coefficients. Thus, for Western Europe, higher TAR increases the likelihood of reporting top-end scores for the questions capturing immigration impacts (outcomes 8, 9 and 10 on the 0–10 scale). For Eastern Europe, a similar result is obtained for the questions "Allow immigrants of the same race" and "Immigration makes a country a better place to live"; at the same time, we also see negative and statistically significant coefficients for the lower-end outcomes of the questions capturing impacts of immigration. In the quadratic model (Table 4), we obtain the inverted U-shaped relationship for Western Europe for the lowest outcome ("Allow none") on the questions capturing respondents' willingness to admit different kind of migrants, as well as for higher-end outcomes of the perception that immigration makes a country a better place to live (with the inflection point in all cases being in excess of 400 tourist arrivals per 100 residents). For Eastern Europe, if anything, the relationship is U-shaped (Table 4).

Instrumental variable results

To deal with potential endogeneity of the tourist arrival variable, we perform instrumental variables estimations for Western and Eastern Europe (Tables 5 and 6, respectively).[5] Given the difficulties of estimating ordered logit models with instrumental variables, we estimate models 1–6 with 2SLS (Two-stage-least-squares), effectively treating answers to the individual attitudes towards immigration questions as continuous variables. Among other things, this means that, for these outcomes, direct comparisons between the correlational results presented in Table 1 and second stage results of the instrumental variable estimations presented in Tables 5 and 6 will not be possible. We will, however, be able to directly compare the correlational and instrumental variable results for the attitudes index outcome.

The lower panel of Table 5 shows the set of instruments and their coefficients in first stage regression that we found to be most successful in predicting the TAR in Western Europe. Specifically, warmer autumns increase tourist arrivals while rainier winters reduce them; the negative coefficient of international sporting events likely reflects the displacement/crowding-out effect (Fourie and Santana-Gallego, 2011).[6] The instruments are jointly statistically significant; the value of the F test of excluded instruments, ranging between 16.44 and 18, exceeds the commonly accepted threshold of 10, confirming that the instruments are relevant.

The second stage results, reported in the upper panel of Table 5, indicate that, in Western Europe, the international tourist arrival rate (as predicted by climatic conditions and international sporting events) has a positive effect on the willingness to allow immigrants of the same and different race/ethnicity and immigrants from poorer countries outside Europe (Columns 1–3), as well as on the immigration attitudes index variable (Column 7). The coefficients of the TAR are not statistically significant in specifications capturing residents' perceived effects of immigration on the economy and culture as well as their views on whether immigration makes the country a better or worse place to live.

Table 6 shows the instrumental variable results for the sub-samples of Eastern European countries. We first note that a different combination of instruments works best at predicting the TAR:

Table 3. Attitudes towards immigration and tourist arrival rate: generalised ordered logit estimations for Western and Eastern Europe.

	Western Europe						Eastern Europe					
	Allow more immigrants of same race	Allow more immigrants of different race	Allow more migrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live	Allow more immigrants of same race	Allow more immigrants of different race	Allow more migrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live
1/2…	0.003	0.002	0.002				−0.000	−0.001	−0.002			
	(0.003)	(0.002)	(0.002)				(0.003)	(0.003)	(0.003)			
…2/3…	0.003	0.002	0.003				0.002	0.002	0.000			
	(0.003)	(0.002)	(0.003)				(0.001)	(0.002)	(0.002)			
…3/4	0.002	0.002	0.003				0.003*	0.002	0.001			
	(0.002)	(0.002)	(0.002)				(0.001)	(0.002)	(0.002)			
0/1…				−0.003	−0.003	−0.001				−0.002***	−0.003*	−0.002**
				(0.002)	(0.002)	(0.002)				(0.001)	(0.002)	(0.001)
…1/2…				−0.002	−0.002	−0.000				−0.001**	−0.002	−0.001
				(0.002)	(0.002)	(0.001)				(0.000)	(0.001)	(0.001)
…2/3…				−0.001	−0.002	−0.000				−0.001*	−0.002	−0.000
				(0.001)	(0.001)	(0.001)				(0.001)	(0.002)	(0.001)
…3/4…				−0.001	−0.001	0.001				−0.002**	−0.002	−0.000
				(0.001)	(0.001)	(0.002)				(0.001)	(0.002)	(0.001)
…4/5…				0.000	−0.001	0.002				−0.001*	−0.003	−0.001
				(0.001)	(0.001)	(0.002)				(0.001)	(0.002)	(0.001)
…5/6…				0.000	0.001	0.002				0.000	−0.001	0.002***
				(0.001)	(0.001)	(0.002)				(0.001)	(0.002)	(0.001)
…6/7…				−0.000	0.001	0.003				0.000	−0.001	0.003***
				(0.001)	(0.001)	(0.002)				(0.001)	(0.002)	(0.001)
…7/8…				0.001	0.002	0.004*				−0.000	−0.001	0.003***
				(0.001)	(0.001)	(0.002)				(0.001)	(0.002)	(0.001)
…8/9…				0.002	0.003*	0.004*				0.001	−0.001	0.003***
				(0.002)	(0.002)	(0.002)				(0.001)	(0.002)	(0.001)
…9/10				0.005*	0.004*	0.005**				0.001	0.000	0.002*
				(0.003)	(0.002)	(0.002)				(0.002)	(0.002)	(0.001)

Notes: The table reports the estimates of the tourist arrival rate for 12 Generalised Ordered Logit (Gologit) model estimations that include the same individual and time-variant country-level controls as in Table 1, as well as the country and year fixed effects. The first column indicates the original dependent variable outcome split for the categories of the Gologit model. Robust standard errors, clustered at the country level, in parentheses. See notes of Table 1, which also apply here.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4. Attitudes towards immigration, tourist arrival rate and its square: generalised ordered logit estimations for Western and Eastern Europe.

		Western Europe						Eastern Europe					
		Allow more immigrants of same race	Allow more immigrants of different race	Allow more migrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live	Allow more immigrants of same race	Allow more immigrants of different race	Allow more migrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live
1/2…	TAR	0.011***	0.010***	0.009***				−0.005	−0.004	−0.009*			
		(0.004)	(0.004)	(0.003)				(0.006)	(0.006)	(0.005)			
	TAR^2	−0.265***	−0.237**	−0.198**				0.122	0.089	0.200*			
		(0.089)	(0.098)	(0.089)				(0.120)	(0.106)	(0.102)			
…2/3…	TAR	0.007	0.006	0.007				0.002	0.004	−0.001			
		(0.005)	(0.004)	(0.004)				(0.004)	(0.004)	(0.004)			
	TAR^2	−0.106	−0.097	−0.113				0.002	−0.047	0.043			
		(0.097)	(0.076)	(0.082)				(0.075)	(0.074)	(0.081)			
…3/4	TAR	0.006	0.005	0.007**				0.004	0.002	−0.003			
		(0.004)	(0.003)	(0.003)				(0.004)	(0.005)	(0.006)			
	TAR^2	−0.102	−0.094	−0.109*				−0.021	−0.000	0.103			
		(0.062)	(0.067)	(0.062)				(0.068)	(0.080)	(0.108)			
0/1…	TAR				−0.002	−0.005	−0.001				−0.004***	−0.007**	−0.001
					(0.005)	(0.004)	(0.004)				(0.001)	(0.003)	(0.001)
	TAR^2				−0.010	0.056	−0.009				0.032*	0.107*	−0.027
					(0.097)	(0.072)	(0.088)				(0.019)	(0.055)	(0.022)
…1/2…	TAR				−0.000	−0.005	0.000				−0.001	−0.005**	0.000
					(0.004)	(0.004)	(0.003)				(0.001)	(0.002)	(0.001)
	TAR^2				−0.044	0.088	−0.018				−0.008	0.091*	−0.027
					(0.077)	(0.074)	(0.078)				(0.023)	(0.047)	(0.020)
…2/3…	TAR				0.001	−0.004	0.002				−0.002	−0.006*	−0.000
					(0.002)	(0.003)	(0.002)				(0.002)	(0.003)	(0.001)
	TAR^2				−0.058	0.058	−0.064				0.011	0.105*	−0.000
					(0.059)	(0.070)	(0.062)				(0.031)	(0.056)	(0.022)
…3/4…	TAR				0.002	−0.002	0.005**				−0.003	−0.006*	−0.001
					(0.002)	(0.002)	(0.002)				(0.002)	(0.003)	(0.001)
	TAR^2				−0.077	0.022	−0.108*				0.024	0.101*	0.011
					(0.063)	(0.068)	(0.066)				(0.031)	(0.057)	(0.027)
…4/5…	TAR				0.003	−0.000	0.006**				−0.003**	−0.007**	−0.003
					(0.002)	(0.002)	(0.002)				(0.002)	(0.003)	(0.002)

(continued)

Table 4. (continued)

		Western Europe						Eastern Europe					
		Allow more immigrants of same race	Allow more immigrants of different race	Allow more migrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live	Allow more immigrants of same race	Allow more immigrants of different race	Allow more migrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live
	TAR^2				−0.086	−0.011	−0.114*				0.047	0.126**	0.052
					(0.064)	(0.075)	(0.068)				(0.032)	(0.063)	(0.038)
…5/6…	TAR				0.004**	0.002	0.006***				−0.001	−0.006*	0.004**
					(0.002)	(0.002)	(0.002)				(0.002)	(0.003)	(0.002)
	TAR^2				−0.101*	−0.044	−0.115***				0.040	0.110*	−0.026
					(0.055)	(0.057)	(0.043)				(0.033)	(0.059)	(0.033)
…6/7…	TAR				0.003	0.003	0.007***				−0.002	−0.007*	0.003
					(0.002)	(0.002)	(0.003)				(0.002)	(0.004)	(0.003)
	TAR^2				−0.101	−0.045	−0.124**				0.049	0.132*	−0.008
					(0.065)	(0.059)	(0.050)				(0.044)	(0.069)	(0.056)
…7/8…	TAR				0.004	0.003	0.008***				−0.003	−0.007	0.003
					(0.003)	(0.002)	(0.003)				(0.002)	(0.004)	(0.004)
	TAR^2				−0.107	−0.047	−0.113**				0.067	0.145*	−0.004
					(0.071)	(0.059)	(0.046)				(0.041)	(0.080)	(0.072)
…8/9…	TAR				0.007**	0.007**	0.009**				−0.003	−0.005	0.002
					(0.003)	(0.003)	(0.004)				(0.003)	(0.004)	(0.004)
	TAR^2				−0.150*	−0.100*	−0.126**				0.090	0.117	0.006
					(0.081)	(0.059)	(0.059)				(0.058)	(0.077)	(0.078)
…9/10	TAR				0.012**	0.008**	0.010***				−0.004	−0.005	−0.002
					(0.005)	(0.004)	(0.004)				(0.003)	(0.004)	(0.004)
	TAR^2				−0.183**	−0.120*	−0.148***				0.106*	0.138*	0.097
					(0.079)	(0.064)	(0.056)				(0.055)	(0.081)	(0.082)

Notes: The table reports the estimates of the tourist arrival rate (TAR) and tourist arrival rate squared/10,000 (TAR^2) for 12 Generalised Ordered Logit (Gologit) model estimations that include the same individual and time-variant country-level controls as in Table 1, as well as the country and year fixed effects. The first column indicates the original dependent variable outcome split for the categories of the Gologit model. Robust standard errors, clustered at the country level, in parentheses. See notes of Table 1, which also apply here.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5. Instrumental variable results: Western Europe.

	Allow more immigrants of same race	Allow more immigrants of different race	Allow more migrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live	Index of pro-immigration attitudes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Tourist arrival rate	0.007**	0.005**	0.006**	0.002	0.003	0.005	0.005**
	(0.003)	(0.002)	(0.003)	(0.005)	(0.004)	(0.004)	(0.002)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Instruments							
Temperature autumn	1.690**	1.690**	1.682**	1.694**	1.712**	1.698**	1.678**
	(0.713)	(0.713)	(0.712)	(0.708)	(0.707)	(0.709)	(0.696)
Precipitation winter	−0.039**	−0.039**	−0.039**	−0.039**	−0.039**	−0.039**	−0.039**
	(0.016)	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)	(0.015)
International sports events	−6.495***	−6.481***	−6.492***	−6.491***	−6.567***	−6.517***	−6.582***
	(2.117)	(2.118)	(2.108)	(2.079)	(2.068)	(2.075)	(2.009)
F test (Kleibergen-Paap)	16.52	16.44	16.58	16.98	17.00	16.79	18.00
Number of observations	242,620	242,529	242,209	241,180	241,847	242,343	228,911
R^2	0.163	0.170	0.156	0.159	0.175	0.168	0.230

Notes: Robust standard errors, clustered at the country level, in parentheses. All models are estimated with 2SLS. See notes of Table 1 which also apply here. Complete econometric output is available in Table A9 of the Supplementary Information document.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6. Instrumental variable results: Eastern Europe.

	Allow more immigrants of same race	Allow more immigrants of different race	Allow more migrants from poor countries outside Europe	Immigrants good for economy	Immigrants good for culture	Immigrants make country a better place to live	Index of pro-immigration attitudes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Tourist arrival rate	0.002*	0.003**	0.003**	0.000	0.003	0.003	0.002*
	(0.001)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Instruments							
Precipitation summer	−0.169**	−0.168**	−0.168**	−0.168***	−0.167**	−0.167***	−0.166***
	(0.066)	(0.066)	(0.066)	(0.065)	(0.065)	(0.065)	(0.064)
Precipitation spring	0.291***	0.290***	0.290***	0.289***	0.290***	0.292***	0.294***
	(0.094)	(0.093)	(0.093)	(0.093)	(0.094)	(0.094)	(0.094)
Temperature autumn	−9.679***	−9.678***	−9.671***	−9.646***	−9.643***	−9.632***	−9.608***
	(2.307)	(2.304)	(2.308)	(2.345)	(2.334)	(2.355)	(2.361)
Precipitation autumn	0.287**	0.287**	0.287**	0.286**	0.286**	0.287**	0.285**
	(0.126)	(0.126)	(0.126)	(0.126)	(0.126)	(0.126)	(0.125)
Temperature winter	−3.360***	−3.364***	−3.358***	−3.359***	−3.364***	−3.348***	−3.379***
	(0.337)	(0.335)	(0.343)	(0.341)	(0.350)	(0.343)	(0.386)
F test (Kleibergen-Paap)	71.94	71.78	70.20	68.18	69.82	65.53	65.28
Number of observations	90,885	90,617	90,202	88,537	88,604	87,246	79,250
R^2	0.106	0.204	0.220	0.114	0.159	0.148	0.235

Notes: Robust standard errors, clustered at the country level, in parentheses. All models are estimated with 2SLS. See notes of Table 1 which also apply here. Complete econometric output is available in Table A10 of the Supplementary Information document.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

colder autumns and winters and rainier summers reduce tourist arrivals, while more precipitation in spring and autumn increase them.[7] These instruments are jointly significant in the first stage regression, with the value of the F test of excluded instruments exceeding 65 in all specifications. The second stage results suggest that, similarly to Western Europe, international tourist arrivals in Eastern Europe have a positive effect on the willingness to allow immigrants of the same and different race/ethnicity and immigrants from poorer countries outside Europe (Columns 1–3), as well as on the immigration attitudes index variable (Column 7); the coefficient of the TAR is statistically insignificant in specifications capturing perceived effects on economy, culture and country as a whole.

As mentioned earlier, a direct comparison of the correlational and instrumental variable results is only possible for the specification explaining the index of immigration attitudes (Column 7 in Tables 1, 5 and 6). For Western Europe, the estimate of the TAR is statistically insignificant in the correlational model, but positive and significant at the 95% level in the instrumental variable estimation. This comparison suggests that the correlational result is subject to a downward bias, which could be explained either by unobserved factors that at the same time increase tourist arrivals and worsen attitudes towards immigration (omitted variable bias), or by tourist arrivals being driven by worsening attitudes towards immigration (reverse causality). For Eastern Europe, the estimated coefficients of the TAR are positive and statistically significant in both the correlational and instrumental variable models. In terms of magnitude, the estimate of the instrumental variable model (0.00235) is 20% higher than its correlational model counterpart (0.00196), implying a similar direction of the bias as in Western Europe.

Overall, the instrumental variable results suggest that international tourist arrivals have a positive effect on attitudes towards immigration in both Western and Eastern Europe. The effect is present only for the variables capturing willingness to allow various types of immigrants, and zero for the perceived effects of immigration.

Discussion and conclusion

This paper set out to determine the effect of international tourist arrivals on attitudes towards immigrants and immigration in tourist-receiving societies. Using data from nine waves of the European Social Survey (2002–2019), we found that greater tourist arrivals are associated with more positive attitudes in Eastern Europe, while in Western Europe the relationship tends to take an inverted U-shape: attitudes towards immigration grow with tourist arrivals up to a certain threshold and decrease thereafter. The instrumental variable analysis, whereby tourist arrivals are predicted with weather conditions and international sporting events, suggests that tourist arrivals have a positive *causal* effect on attitudes towards immigration in both Eastern and Western Europe.

These findings hold societal and policy relevance as they imply that tourism may foster a greater acceptance of immigrants, which in turn affects the formation of immigration policies (Facchini and Mayda, 2008), actual migration flows (Gorinas and Pytliková, 2017), and integration of immigrants (Fussell, 2014), potentially contributing to more open and inclusive societies in tourist receiving countries and sustainable development. The issue is particularly important for Eastern Europe: in recent years, the region has witnessed not only growing numbers of international tourists and immigrants but also levels of ethnic nationalism, prejudice, xenophobia and anti-immigration sentiment that have been higher than in Western Europe (Buštíková, 2018; Minkenberg, 2017). Our findings from both the correlational and causal analyses suggest that international tourism has fostered a more positive outlook towards immigrants in Eastern Europe and the anti-immigration attitudes gap between the Eastern and Western Europe would have been higher without tourism.

The picture is somewhat different for Western Europe. While international tourist arrivals there have a positive causal effect on attitudes towards immigration, we also find that at a very high intensity of tourism further tourist arrivals in Western Europe are associated with more negative attitudes towards immigration. This finding is consistent with the theoretical approach highlighting the role of emotions and psychological well-being in explaining attitudes towards immigration: as excessive tourism is likely to lower the psychological well-being of residents (Ivlevs, 2017; Okulicz-Kozaryn and Strzelecka, 2017) and lower psychological wellbeing likely to lead to anti-immigration sentiment (Korol and Bevelander, 2021; Welsch et al., 2021), excessive tourist arrivals may make hosts less favourable to immigration. While it is yet to be established if this finding represents a causal effect,[8] it sends an alarming message for practitioners and policymakers: excessive tourism potentially lower residents' tolerance and acceptance of outgroups, such as immigrants, slowing up the development of inclusive and open societies.

Notably, the negative association between the TAR and pro-immigration sentiment that we observe at high levels of tourism intensity is present in Western – and not Eastern – Europe. A possible explanation for this discrepancy is the relatively more mature and established flows of both incoming tourists and immigrants in Western than Eastern Europe. In the latter, restriction-free international tourism has only become possible after the fall of the Socialist Bloc, and most Eastern European countries find themselves in the early stages of the tourism development cycle, even if the TARs in some parts of the region are relatively high. In such contexts, positive emotions from contact with tourists would be dominant (Okulicz-Kozaryn and Strzelecka, 2017), increasing openness and tolerance toward outgroups, such as immigrants. It is also important to note that, for the most of the period of study, Eastern European countries have been migration-sending rather than migration-receiving. Many people in these countries would therefore have had more contact with tourists than immigrants, and tourists in such contexts could be even more likely to help shape attitudes towards outgroups.[9]

While our work provides novel evidence on the effect of international tourist arrivals on residents' attitudes towards immigration, it has several limitations which open directions for future research. First, we have discussed two theoretical channels, related to labour markets and emotions/contact with tourists, through which tourist arrivals may be affecting attitudes towards immigration, but the data at hand do not allow us to test for their relative strength or the role of potential mediators. Future research could seek to disentangle these channels by tailoring surveys which would include questions on whether respondents are likely to benefit or lose out from tourism-induced immigration, on how often they come into contact (direct or indirect) with tourists and whether this contact is positive or negative etc.[10]

The geographical level (European countries) of the empirical analysis could be considered another limitation of our study. While country-level evidence represents an important first step, one could rightly argue that, within a country, tourist arrivals have a greater impact on attitudes toward immigration in high-tourism-intensity areas. A promising research avenue would therefore be conducting the analysis at the regional level – within one or several countries – checking, in-particular, if the inverted U-shaped relationship holds also at the region level. Other ways to understand the mechanisms behind our results would be to relate the arrivals of tourists from specific countries to the attitudes towards immigration from these countries as well as delve into the effects on attitudes towards immigration of various types of tourism: international, domestic, visiting, business, leisure etc.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. For a broader literature on residents' quality of life and tourist arrivals (and residents' perceptions of tourism impacts) that is also relevant here, see, for example, Ap (1992), Biagi et al. (2019), Bimonte et al. (2019), Carneiro and Eusebio (2015).
2. Hosts may also become directly involved in the "production of cosmopolitanity" (Notar, 2008; Salazar, 2010).
3. For consistency, we focus on overnight visitors – a category of inbound international tourism where the data are most commonly available.
4. Due to potential collinearity issues, we refrain to include GDP growth *and* GDP per capita in the same regressions in the analyses of Western and Eastern European country sub-samples. We include GDP per capita in the former and GDP growth in the latter, as this choice of variables ensures the best model performance for the two sub-samples.
5. As the results have already differed for Western and Eastern Europe in the linear and quadratic correlational models (Tables 1 and 2 and robustness and sensitivity checks), we performed the instrumental variable analysis for these two groups only. In addition, while we could find two different, satisfactory sets of instruments for Western and Eastern Europe, it was not possible to find such a set for the whole sample.
6. The set of instruments also includes precipitation in autumn and temperature in winter. Their coefficients are statistically insignificant, and for space-saving purposes we report them in Table A9 of Supplementary Information. The F test of instruments' relevance (joint significance), reported in Table 5, takes these instruments into account.
7. In addition, the set of instruments includes temperature in summer and spring. Their coefficients are statistically insignificant, and for space-saving purposes we report them in Table A10 of Supplementary Information. The F test of instruments' relevance (joint significance), reported in Table 6, takes these instruments into account.
8. It cannot be guaranteed that this finding represents a causal effect (it is generally not possible to estimate non-linear effects with the instrumental variable method) and, as a correlation, it could be explained either

by unaccounted-for, time-variant factors that drive both tourist arrivals and anti-immigration sentiment or reverse causality – tourists being attracted to countries with worsening attitudes towards immigration.

9. On a related note, it would also be interesting to explore the effects of immigration on attitudes towards tourists, especially in contexts where immigration precedes tourism. This question is beyond our study and we leave it for future research.
10. We have conducted some exploratory analysis on whether our results are stronger for people working in tourist occupations (and thus are more likely to be in contact in tourists) and found that, at least in Eastern Europe, the effect of international tourist arrivals on attitudes towards immigration is more pronounced for this group of people. See Table A11 of Supplementary Information for results and commentary.

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