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The impacts of immigrants and institutions on bilateral tourism flows

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HIGHLIGHTS

- The immigration and tourism nexus has been studied from developed to developing markets.
- Immigrants have significant effect to inbound tourism however; the effect is different across regions.
- Institutional quality is important for the visitors that would decide the destination country.

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ABSTRACT

In this paper, we use data on recent bilateral tourism flow from 34 Organisation for Economic Co-operation and Development (OECD) countries to 52 middle-to low-income countries for the period 1995–2010 to determine whether immigration, trade and institutional quality play a role in driving OECD nationals to visit immigrant-source countries. Except for the African countries, the results show that immigrants residing in OECD countries have a positive advertising effect for their home country, inducing tourism flows from OECD countries. We also find that the quality of institutions, along with freedom and civil liberty indices, are important in selecting tourism destinations. A massive 8% of the variation in tourism flows can be accounted for by these factors. These results hold for the subsample and the whole sample with two exceptions: European and African destinations. We posit that this feature of the data exists because European (African) countries are so similar to each other, and small differences in the indexes do not matter at the top (bottom) of the distribution. By controlling for gravity and macroeconomic stability variables, we also show that the trade flows between countries, among other factors, play a crucial and stable role on tourism flows. Dynamic panel data estimation is used to account for the influence of repeat visits and support our findings.

1. Introduction

The growth in international tourism has taken place around various activities over the years: leisure, business, medical, cultural, adventure, wellness, sports, religious, wildlife and ecotourism. The United Nations has reported that this growth has surpassed the US $1 trillion mark, thereby making tourism an engine of development for many small economies and a viable sector for developed economies. The literature has, without a doubt, captured the different facets of the growing importance of the tourism industry. Studies by Crouch (1994); Lim (1997); Witt and Witt (1995) have summarized advances in the field that span the period 1960–2000, while Song and Li (2008) have produced a more detailed account of the different contributions that took place in the post-2000 era by classifying the studies in terms of topics of interests, methodological approaches, data sources, regional coverage and main findings.

A prominent feature of the development of tourism is the role that marketing has played in promoting tourist destinations directly or indirectly. Direct marketing often takes the form of TV advertisements; the publication of brochures, pamphlets and catalogues; sponsoring events and/or awarding prizes to induce people to physically move across borders. Implicit or indirect marketing, however, comes in the form of positive externalities from the export of music, movies, TV shows, soap operas, bilateral agreements and visa waivers. The basic idea is whether people are

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enticed to visit a foreign destination by virtue of being exposed to the arts of that culture or the incentives created by foreign government policies. Notable contributions under this strand of the literature include the works of Beeton (2005); Butler (1990); Cornell (2012); Croy (2010); Edensor (2001); Kim and Richardson (2003); Macionis and Sparks (2009); Mordue (2009); Portegies (2010); Riley, Baker, and Van Doren (1998); Urry (1994). The most recent piece is the work of Balli, Balli, and Cebeci (2013), which documents the effects of Turkish soap opera TV shows exported to Eastern Europe and the Middle East on tourism inflows to Turkey. Using both static and dynamic panel data analyses, they find statistical evidence that these TV programs influence viewers to visit Turkey and are, by and large, contributors to the boost in tourism that Turkey has experienced lately.

What we have learnt from these studies is that international tourism is partly driven by the satisfaction individuals derive from watching movies and/or listening to music from other countries. Along this same line, we reason that since immigrants live alongside nationals in the same country, nationals have had opportunities to hear firsthand about the immigrants' place of origin, be invited to their festivities, taste their foods, listen to their music and become immersed in their culture, and even get invited to their motherland. A natural question that emerges is whether this conviviality is reason enough for a linkage between tourism and immigration to exist along the same lines as art and tourism.

On both the theoretical and the empirical fronts, there have been some attempts at explaining the tourism-immigration nexus. Jackson (1990) provides the first study, on the relationship between international tourism and population movements (mostly immigrant patterns) for selected developed countries whilst Williams and Hall (2001) later produced the theoretical model. Subsequent to Jackson (1990), a number of remarkable studies appear in the literature. King (1994), Seetaram (2012a), (2012b) consider the linkage between immigrants flow and inbound and outbound tourism for Australia and find statistically significant ties. For New Zealand, Feng and Page (2000) and Genç (2013) also find significant effects of immigrants on inbound tourism demand. Along the same vein, Massidda, Etzo, and Piras (2014); Mechinda, Sirivan, and Nak (2009); Leitão and Shahbaz (2012) have documented similar results for Thailand, Italy, and Portugal, respectively. All these studies have one thing in common; they are all based on country-case studies. As we do know, it is an incorrect reasoning or logical fallacy to believe what is true for the part is necessarily true for the whole or a group. In this vein, our paper makes this valuable contribution to the existing literature; it provides the most comprehensive assessment of the linkage between immigration and tourism that encompasses 34 developed and 53 developing countries. Above and beyond the usual economic variables, we take our analysis one step further by investigating the role that the quality of institutions in the home country of immigrants residing in developed countries play when nationals of these countries make travel decisions.

We also conjecture that the linkage between immigration and tourism may be quite superficial if trade and the quality of institutions in the immigrant-source country are not taken into consideration, among other relevant variables documented in the literature. For example, for nationals of country *i* to have the opportunity to taste the local food and other specificities of country *j*, trade must exist between them; again, if country *j* is not stable, travel advisories from country *i* would, without a doubt, hamper the flow of tourists to country *j*. While our investigation into the association between immigration and tourism is novel, to the best of our knowledge of the literature, several notable contributions are in order when it comes to assessing the ties between trade, investment, immigration and institutions.

The pioneer work of Gould (1994) has shown that immigrant links have historically been important in increasing bilateral trade flows between immigrants' home and host countries. Studies by Head and Ries (1998) for Canada, Girma and Yu (2002) for the Commonwealth countries, and Partridge and Furtan (2008) for the Canadian provinces have all corroborated the findings of Gould. More recently, Foad (2011) tested the effect of immigrants on bilateral investment destinations and found that the immigrant population of a country plays a crucial role in the destination of the portfolio investments and domestic investors tend to be biased towards countries with a relatively larger representation of immigrants within their own country. These studies did not put emphasis on the relationship between institutional quality and international trade. However, estimating a gravity model, Anderson and Marcouiller (2002) did; they show that bilateral trade volumes are significantly affected by trading countries' relative institutional quality, with better institutions being conducive to larger trade volumes. In other words, when trade is supported by an effective rule of law and a government is transparent enough, country partners generate more trade due to stability and lower risk. Ranjan and Lee (2003) find that bilateral trade volumes are more affected by institutional quality in sectors that they classify as more institutionally intensive. These findings seem to anchor in Rodrik's (2000) contention that the globalisation of markets carries the seed of producing contracts that are difficult to enforce across jurisdictional boundaries. As a result, countries with comparable governance quality levels generally trade more with each other (De Groot, Linders, Rietveld, & Subramanian, 2004). As the pioneering work by Alfaro, Kalemli-Ozcan, and Volosovych (2008) shows, capital flows more between rich countries than from rich to poor countries, mainly due to weak institutions in poor countries.

Therefore, what the literature has clearly established thus far is that the quality of institutions matters; it is more so when we consider that tourists, like typical economic agents, are risk-averse, though curious and adventurous; they like to feel secure in the places where they choose to go on vacation. Taking this into consideration, we make use of different measurements of the institutional quality variable: one is the corruption perception index extracted from www.transparency.org, while the others are the freedom index and the civil rights index that come from www.FreedomHouse.org.

Our baseline model is based on a panel dataset of 34 immigrant-receiving countries (country *i*; tourist origin) and 52 immigrant-sending countries (country *j*; tourist destination) for the period of 1995–2010. In estimating this model with the static panel data technique, we find that gravity equation variables matter for tourism flows. In addition, macroeconomic variables, such as inflation and exchange rate volatilities of the destination countries and the gross domestic product (GDP) per capita of the origin countries, are all statistically significant with the expected signs. Controlling for immigration, we find that immigrants from country *j* living in country *i* have a positive effect on tourism flows to country *j*. However, our cross-continent analysis also reveals that immigrants from Africa and Europe do not have any effect on tourism flows back to their countries of origin. The institutional quality variables are all statistically significant in explaining tourism flows for countries in Asia–Pacific and Latin America. By contrast, we observe that tourists do not consider the relative quality of institutions when they fly to either Europe or Africa. These two continents lie on the two extremes of the institutional quality continuum: tourists do not care much for the slight differences in institutional quality in the highly developed countries of Europe; for Africa, we have the totally opposite situation, where institutional quality is so low that it makes no difference as to which country a tourist visits, and other drivers motivate such trips.

Table 1
Variable definition and source.

Variable name	Definition	Source
$Tourism_{ij}$	Tourism inflows from country *i* to country *j*. The variable is created by taking the logarithm of (*Tourism flows* $_{ij}$ + 1)	World Tourism Organization (2012) and the Compendium of Tourism Statistics database (UNWTO)
$Colony_{ij}$	A binary variable that takes 1 if the origin country and country *i* have a colonial relationship and 0 otherwise	French Research Center in International Economics (CEPII)
$Col1945_{ij}$	A binary variable that takes 1 if the origin country and country *i* have a colonial relationship after 1945 and 0 otherwise	CEPII
$Common\ language_{ij}$	A binary variable that takes 1 if the origin country and country *i* shares at least one common language and 0 otherwise	CEPII
$Distance_{ij}$	Physical distance between the origin country's capital city and the capital of country *i* (in kilometres)	CEPII
$Contigious_{ij}$	A binary variable that takes 1 if country *i* and country *j* share the same border, and takes 0 if they do not	CEPII
$Exchange\ rate_{j}$	The standard deviation of the exchange rate for destination country *j* in national currency per USD (for the US, it is the national currency per Special Drawing Rights (SDR))	IMF's International Financial Statistics
$Gdpc_{i}$	GDP per capita for country *i* of the tourists originate from	World Development Indicators (WDI) database.
$Export_{ij}$	The volume of the exports of country *i* sold to country *j*. The variable is created by taking the logarithm of (*Export* $_{ij}$ + 1)	IMF's Direction of Trade Databsase
$Import_{ij}$	The volume of the imports of country *i* bought from country *j*. The variable is created by taking the logarithm of (*Import* $_{ij}$ + 1)	IMF's Direction of Trade Databsase
$Immigrant_{ij}$	Number of immigrants originating from country *j* residing in country *i*. The variable is created by taking the natural logarithm of (*Immigrant* $_{ij}$ + 1)	United Nation's Immigration Database
$Institutional\ quality_{j}$	Institutional quality is an index created by Transparency.org numbered between 0 and 10. 10 corresponds the best institutional quality	Transparancy.org
$Population_{j}$	The population of country *j*; the variable is created by taking the natural logarithm of *Population*.	WDI database.
$Inflation_{j}$	The standard deviation of the inflation levels of country *j*. We use 15-year intervals to calculate the inflation volatility	WDI database.
SARS	A binary variable that takes 1 for the period of the SARS outbreak in 2002 until post-shocks occur and 0 otherwise	Author's own calculations.
CL_{j}	An index created by Freedom House to measure civil liberties across countries and it takes values between 0 &7, with 7 being the worst score.	Freedom House
$Freedom_{j}$	A binary variable created by Freedom House that takes 1 if a country is considered to be a “free” country, and takes 0 if a country is considered to be “partially free” or “not free”	Freedom House
$Timezone_{ij}$	The time zone difference between country *i* and country *j*	Authors' own calculations

Note: SARS refers serious acute respiratory syndrome.

Estimating the model with the dynamic panel technique, our findings are robust for trade, population, GDP and institutional quality variables. In fact, except for Africa and Europe, the coefficient estimates of institutional quality are statistically significant for both the whole and subsample periods. We did not find a significant dynamic relationship between immigration and tourism. This may stem from the incremental change in the level of immigrants, which may be ineffective in influencing tourism demand.

The outline of the paper is as follows: Section 2 presents the data and the data analysis. Section 3 discusses the methodology and the empirical results. Finally, Section 4 concludes the paper.

2. Data and descriptive statistics

2.1. Data sources (variables used)

The dataset for this paper was assembled using a variety of sources (see Table 1).[1] Data for the decomposition of the tourism inflows by nationality for each sample country were extracted from the World Tourism Organisation (2012) and the Compendium of Tourism Statistics database (UNWTO). Our sample is made of 52 low-income immigrant-source countries (*j*) and 34 immigrant-receiving countries (*i*) where tourists originate from, and spans the period 1995–2010. We obtained the bilateral immigrants stocks between country sets *i* and *j* from the United Nations' Immigration Database: Trends in International Migrant Stock: Migrants by Destination and Origin.

As shown in Table 1, we have created a number of dummy variables to capture a common language (*Common language*), colonial ties (*Colony*) (even after 1945 (*Col45*)) and a common border (*Contiguous*). These dummies take the value of 1 when the characteristic is present and 0 otherwise. These variables along with the time zone difference (*Timezone*) and distance between the two sets of countries (*Distance*) originate from the French Research Center in International Economics. Data on population, real GDP per capita, exchange rates and inflation for country set *i* are taken from the World Bank's World Development Indicators database. The exchange rate is expressed as national currency units per US dollar. Both the exchange rate and inflation volatilities are measured as the standard deviation over a 15-year period. To gauge the influence of bilateral trade (exports and imports) on tourism inflows, exports and imports in USD between the two countries sets were extracted from the International Monetary Fund's Direction of Trade Database. We measure institutional quality using Transparency International's corruption perception index (CPI), which takes values between 0 and 10, with 10 being the highest quality. This index captures institutional quality in five major areas: (1) size of government, (2) legal structure and security of property rights, (3) access to sound money, (4) exchange with foreigners, and (5) regulation of capital, labour and businesses. We use CPI to grasp the degree to which corruption is perceived to exist within institutions.[2] We also make use of Freedom House's indices of civil rights, freedom of expression or

[1] See Table 1 for the construction of the variables and the data sources.

[2] A number of researchers have made use of the CPI in their studies, Habib and Zurawicki (2002), Seligson (2002) to cite just a few.

Table 2
Descriptive statistics for variables.

Variables	Observations	Mean	Standard deviation	Maximum	Minimum	Skewness	Kurtosis
$Tourism_{ij}$	19,571	8.35	2.43	17.03	0.69	0.01	3.20
$Colony_{ij}$	27,244	0.03	0.14	1.00	0.00	5.45	30.74
$Col1945_{ij}$	27,244	0.02	0.13	1.00	0.00	7.27	53.93
$Common\ language_{ij}$	27,244	0.02	0.14	1.00	0.00	2.91	7.82
$Distance_{ij}$	27,244	7435	4058	19,447	111	0.30	2.60
$Contigious_{ij}$	27,244	0.02	0.12	1.00	0.00	7.82	62.23
$Exchange\ rate_i$	28,288	10.31	33.23	250	0.06	4.91	29.02
$Gdpc_i$	28,288	26329	1135	112028	1135	1.07	5.38
$Export_{ij}$	27,287	14.15	5.88	24.29	0.00	−1.31	4.01
$Import_{ij}$	27,287	15.70	4.90	24.36	0.00	−1.99	7.11
$Immigrant_{ij}$	22,320	25,686	140,388	3,663,722	25	14.79	316.16
$Institutional\ quality_j$	27,064	2.99	0.97	6.4	1.0	1.00	3.72
$Population_j$	28,288	16.61	1.50	19.54	12.49	−0.53	3.41
$Inflation_j$	27,030	96.15	326.27	2381	0.48	4.80	26.81
$SARS$	28,288	0.125	0.33	1.00	0.00	2.26	6.14
CL_j	27,370	3.83	1.26	7.00	1.00	0.28	2.63
$Freedom_j$	27,370	0.26	0.43	1.00	0.00	1.08	2.17
$Timezone_{ij}$	28,288	4.82	3.70	18.00	0.00	0.88	3.85

Note: See Table 1 for variable definitions.

belief, and government functioning.[3] The civil rights indices take values between 0 and 7, with 7 being the worst score. The report on freedom classifies countries as either “free”, “partially free” or “not free”, depending on how democracy is evolving.[4] Using this information, we create a dummy variable, *Freedom*, which takes 1 if a country is free and 0 otherwise.

2.2. Descriptive statistics

Table 2 shows the descriptive statistics for all variables. The dependent variable, $tourism_{ij}$, is the natural logarithm of the tourism flows from country *i* to country *j*. The natural log-transform of $imports_{ij}$, $gdpc_i$, $population_j$, $distance_{ij}$ and $immigrants_{ij}$ are used as independent variables, along with a set of dummy and index variables to capture institutional quality. Detailed explanations of the variables are supplied in Table 1. $Imports_{ij}$ is the total imports of country *i* from country *j* in US dollars and $Gdpc_i$ is the GDP per capita in USD. While the many statistics are straightforward to interpret, Table 1 shows that only the distribution of the trade and population data is skewed to the left. All others are positively skewed and peaked, as per the skewness and kurtosis values. The one variable with a distribution close to normal is tourism flows between the countries, with a skewness of 0.01 (which almost equals zero) and a kurtosis of 3.20 (almost equal to 3). The correlation between the variables not reported here to save space varies from −0.32 to 0.59, thereby indicating that collinearity is not of great concern. Panel unit root tests performed on the data are shown in Table 3. We reject the null hypothesis that the data is not stationary at all significance levels.[5]

3. Empirical analysis

3.1. Static panel estimations

Tourism is widely regarded as a form of international trade. Accordingly, modelling bilateral tourist flows would be similar to creating a gravity model for bilateral trade (Poyhonen, 1963; Tinbergen, 1962) or bilateral financial asset flows (Balli, Basher, & Balli, 2010; Balli, Louis, & Osman, 2009; Lane & Milesi-Ferretti, 2008). In the basic forms of the gravity model, the amount of flows (trade) between the source and destination countries is assumed to increase with their size – namely population, GDP per capita, and market capitalisation – and to decrease with distance and the cost of transportation between economic centres. It is also common to include dummy variables such as sharing the same common border, colonial ties, common language, common currency and common religion. We improve upon the literature by incorporating key variables such as immigration and institutional quality in determining whether nationals of immigrant-receiving countries tend to visit immigrant-source countries by virtue of being exposed to these immigrants. Recognising that the decision to vacation in a place does not depend on income and gravity variables alone, we also conjecture that the state of democracy, civil liberty (the variable *CL*) and freedom cross people's minds when choosing among tourist destinations. Accordingly, we model the bilateral tourism flows as:

$$Tourism_{ij,t} = \beta_0 + \mu_t + \beta_1 X_{ij,t} + \beta_2 Z_{ij,t} + B_3 Immigrant_{ij,t} + B_4 INS.QUALITY_{j,t} + B_5 FREEDOM_{jt} + B_6 CL_{jt} + \varepsilon_{ij,t}, \quad (1)$$

Table 3
Summary of panel unit root test for variables.

Variable	LLC	IPS	ADF	PP
$Tourism_{ij}$	0.0000	0.0000	0.0000	0.0000
$Export_{ij}$	0.0000	0.0000	0.0000	0.0000
$Import_{ij}$	0.0000	0.0000	0.0000	0.0000
$Exchange\ rate_i$	0.0000	0.0000	0.0000	0.0000
$Gdpc_i$	0.0000	0.0000	0.0000	0.0000
$Exchange\ rate_i$	0.0000	0.0000	0.0000	0.0000
$Immigrant_{ij}$	0.0000	0.0000	0.0000	0.0000
$Institutional\ quality_j$	0.0000	0.0000	0.0000	0.0000
$Population_j$	0.0000	0.0000	0.0000	0.0000
$Inflation_j$	0.0000	0.0000	0.0000	0.0000
$SARS$	0.0000	0.0000	0.0000	0.0000
CL_j	0.0000	0.0000	0.0312	0.0000
$Freedom_j$	0.0000	0.0000	0.0000	0.0000

Note: P-values are printed from each test. LLC: Levin, Lin, and Chu (2002); IPS: Im, Pesaran, and Shin (2003) W-statistic; ADF: ADF–Fisher chi-square; PP: PP–Fisher chi-square.

[3] The values for each variable fall in the ranges of 0–7 and 0–15, where the maximum value corresponds to the highest standard.

[4] Freedom House is a U.S.-based non-governmental organisation that conducts research on and advocate democracy, political freedom, and human rights.

[5] We used the testing procedures of Levin et al. (2002), Im et al. (2003), Maddala and Wu (1999), and Choi (2001) to test for the presence of unit roots in the series.

Table 4
Panel data estimation for whole sample.

	(1)	(2)	(3)	(4)	(5)	(6)
ln(*Import*$_{ij}$)	0.28 (0.004)***	0.25 (0.01)***	0.28 (0.01)***	0.28 (0.01)***	0.28 (0.01)***	0.22 (0.01)***
***Common language*$_{ij}$**	0.70 (0.07)***	0.59 (0.05)***	0.65 (0.03)***	0.64 (0.03)***	0.67 (0.05)***	0.46 (0.05)***
***Colony*$_{ij}$**	0.52 (0.02)***	0.66 (0.13)***	0.52 (0.04)	0.51 (0.05)***	0.48 (0.06)***	0.42 (0.03)***
***Col1945*$_{ij}$**	0.50 (0.45)	−0.19 (0.16)	0.24 (0.12)**	0.41 (0.31)	0.36 (0.31)	−0.22 (0.16)**
ln(*Distance*$_{ij}$)	−0.20 (0.02)***	−0.39 (0.03)***	−0.21 (0.02)***	−0.27 (0.03)***	−0.23 (0.02)***	−0.19 (0.02)
***Contigious* $_{ij}$**	2.14 (0.11)***	2.38 (0.13)***	2.13 (0.11)***	2.04 (0.11)***	2.08 (0.11)***	2.51 (0.11)***
ln(*Population*$_j$)	0.44 (0.01)***	0.47 (0.01)***	0.44 (0.01)***	0.44 (0.01)***	0.44 (0.01)***	0.49 (0.01)***
ln(*Gdpc*$_i$)	0.59 (0.02)***	0.64 (0.03)***	0.53 (0.01)***	0.59 (0.01)***	0.59 (0.02)***	0.57 (0.02)***
SARS	−0.11 (0.04)***	−0.12 (0.03)***	−0.11 (0.03)***	−0.12 (0.03)***	−0.12 (0.03)***	−0.11 (0.03)***
***Inflation*$_j$**	−0.03 (0.01)***	−0.02 (0.005)***	−0.03 (0.01)***	−0.02 (0.007)***	−0.03 (0.01)***	−0.03 (0.01)***
***Exchange rate*$_j$**	−0.02 (0.01)**	−0.04 (0.01)***	−0.03 (0.01)***	−0.04 (0.01)***	−0.02 (0.01)***	−0.08 (0.01)***
***Timezone*$_{ij}$**	−0.04 (0.01)***	−0.02 (0.01)**	−0.04 (0.01)***	−0.04 (0.01)***	−0.04 (0.01)***	−0.06 (0.01)***
***Immigration*$_{ij}$**	–	0.04 (0.01)***	–	–	–	0.03 (0.01)***
***Institutional quality*$_j$**	–	–	0.46 (0.007)***	–	–	0.42 (0.02)***
***Freedom*$_j$**	–	–		0.65 (0.03)***	–	0.57 (0.01)***
***CL*$_j$**	–	–			0.08 (0.02)***	0.09 (0.01)***
No. of observations	18,018	14,545	17,948	17,777	17,777	13,910
Jarque–Bera *p*-value	0.34	0.44	0.41	0.42	0.33	0.35
Adjusted R^2	0.38	0.41	0.42	0.42	0.41	0.46

Notes: *, ** and *** indicate that the coefficient is significant at the 10%, 5% and 1% level respectively. Standard errors are reported in parentheses. See Table 1 for the variable definitions. Dependent variable: log (*Tourism flows*$_{ij}$ + 1).

where i and j indicate immigrant-receiving and source countries respectively, t is time, β indicates slope coefficients, X is a matrix of values of all explanatory variables, Z is a matrix of all dummy variables and ε is the disturbance term.

We estimate Equation (1) using the static panel regression technique and present the results in Tables 4 and 5. For each version of Equation (1) estimated, we control for time-fixed effects (μ_t) and use the Jarque–Bera statistic to test for the normality of the residuals.[6] In all instances, we fail to reject the null hypothesis that the residuals are normally distributed. Heterosekdasticity and autocorrelation tests were performed using the White Breusch–Pagan test for heteroskedasticity and the Breusch–Godfrey test for controlling the autocorrelation has been implemented. For the estimations of the equation above in Tables 4 and 5, we have found very significant test results for the evidence of the existence of heteroskedasticity and autocorrelation. For instance; the P-values of the White Breusch–Pagan, and Breusch–Godfrey test for Table 4 is 0.00, indicating the existence of both heteroskedasticty and autocorrelation.[7] Upon evidence of autocorrelation and heteroskedasticity, the GLS estimations are used to correct for both heteroskdasticity and autocorrelation of the residuals.

Table 4 contains results pertaining to the estimation of six different model specifications of Equation (1). Column 1 shows the results of a model with all gravity variables, leaving aside the control variables (i.e. $Immigrant_{ij}$,$INS.Quality_j$,, $Freedom_j$, CL_j). Each of these variables is then added sequentially in the regression equation and the results are inserted in Columns 2 to 5. This strategy enables us to gauge the effect of, say, immigrants on tourism flows, while holding other control variables constant. Column 6 provides the results when all variables are modelled jointly. In other words, Column 6 contains all coefficient estimates of Equation (1). As we move along with the interpretation of the results, consideration is only given to variables that are statistically significant. As per Column 1, we find the imports of country j from country i are an important determinant of tourism flows from country i to country j, with a coefficient estimate of 0.28 and a standard deviation of 0.004, indicating that for every one percentage point increase in imports, tourism increases by 0.28%. This statistically significant coefficient estimate remains robust across model specifications (Column 2 to 6).

Apart from Khadaroo and Seetanah (2008), there have been few studies in the literature using the gravity model of trade to tackle tourism issues. However, this paper is a first in the literature in documenting the influence of trade on tourism inflows in a gravity model of trade, establishing that trade indeed promotes tourism across countries. With the exception of colonial relationship after 1945 (*Col45*), which varies between significant and non-significant levels with varying signs across models, all other variables have the expected sign and are statistically significant. These findings are consistent with the literature in suggesting that nationals of immigrant-receiving countries are more likely to visit immigrant-source countries if the two groups of countries share the same language (Eilat & Einav, 2004; Witt & Witt, 1995), colonial ties (Fourie & Santana-Gallego, 2011) and have a relatively shorter geographic distance between them (Armstrong & Read, 2004; McElroy & Parry, 2010). The impact of time zone difference on tourism flows is negative and statistically significant. This is quite intuitive, as tourists would normally refrain from taking trips that involved jet lag when visits are scheduled to be short in duration. This result is also in accordance with the large and significant positive effect of the common border variable, indicating that the ease of travelling by automobile and closer destinations encourage tourism flows between countries.

The macroeconomic variables incorporated in the models are all significant, with their respective expected signs. Depending on the column focused on, Table 4 shows that a 1% increase in income per capita in country i gives rise to a 0.53–0.64% increase in tourism from country i to country j, therefore confirming that as countries get richer, more is allocated towards tourism activities abroad. These results are in line with Khadaroo and Seetanah (2008). Inflation and exchange rate volatilities are two variables used to measure the macroeconomic stability of the destination country set j. The results confirm that these two variables influence tourists' real incomes negatively. As such, tourists concentrate on markets that are economically stable to reduce the loss of purchasing power

[6] We employed the Haussman test to see if the random effect exists but we could not find evidence of its presence. To test for time and cross-section fixed effects, we used the joint F-test for time dummies and found them to be significant. By contrast, the joint test for the cross-section dummy coefficients was not statistically significant. Accordingly, we estimated with time-fixed effect models.

[7] For the heteroskedasticity tests, the null hypothesis is that the residuals are homoskedastic whereas for the autocorrelation tests the null hypothesis is that the residuals do not have serial correlation.

Table 5
Panel data estimation for the Continent Samples.

	Asia–Pacific	Latin-America	Africa	Europe
ln(*Import*$_{ij,}$)	0.11 (0.008)***	0.09 (0.008)***	0.12 (0.01)***	0.32 (0.01)***
***Common language*$_{ij}$**	1.44 (0.14)***	0.58 (0.08)***	0.65 (0.03)***	–
Colony$_{ij}$	1.46 (0.30)***	–	−0.75 (0.17)***	0.34 (0.23)
***Col1945*$_{ij}$**	1.43 (0.42)	–	–	−0.19 (0.45)
ln(*Distance*$_{ij}$)	−0.57 (0.09)***	−1.29 (0.07)***	−1.48 (0.06)***	−0.99 (0.09)***
***Contigious* $_{ij}$**	2.99 (0.57)***	0.17 (0.31)		3.47 (0.17)***
ln(*Population*$_j$)	0.69 (0.02)***	0.73 (0.02)***	0.46 (0.02)***	0.59 (0.03)***
ln(*Gdpc*$_i$)	0.96 (0.03)***	1.12 (0.03)***	0.48 (0.03)***	0.63 (0.04)***
***Inflation*$_j$**	−0.04 (0.001)***	−0.12 (0.21)	−0.01 (0.002)***	−0.04 (0.01)***
SARS	−0.03 (0.01)***	−0.02 (0.02)	0.03 (0.05)	−0.03 (-0.02)
***Exchange rate*$_j$**	−0.03 (0.01)***	−0.01 (0.04)	−0.02 (0.002)***	−0.02 (0.005)***
***Timezone*$_{ij}$**	−0.08 (0.01)***	−0.03 (0.01)***	−0.19 (0.02)***	−0.04 (0.01)***
***Immigration*$_{ij}$**	0.05 (0.01)***	0.03 (0.007)***	−0.02 (0.10)	0.01 (0.01)
***Institutional Quality*$_j$**	0.91 (0.03)***	0.24 (0.03)***	−0.02 (0.03)	0.47 (0.32)
***Freedom*$_j$**	0.67 (0.12)***	0.57 (0.06)***	−0.58 (0.44)	−0.18 (0.17)
***CL*$_j$**	0.23 (0.20)	0.25 (0.02)***	0.10 (0.21)	−0.62 (0.44)
No. of observations	3761	3885	4923	1341
Jarque–Bera (*p*-value)	0.25	0.28	0.25	0.31
Adjusted R^2	0.70	0.71	0.40	0.78

Notes: *, ** and *** indicate that the coefficient is significant at the 10%, 5% and 1% level respectively. Standard errors are reported in parentheses. See Table 1 for the variable definitions. Dependent variable: log (*Tourism flows*$_{ij}$ + 1). This table is the subsample analysis of Table 4. For example, Asia–Pacific refers to the sample where country *i* is located only in the Asia–Pacific region.

associated with the inflation and exchange rate risks.

Our hypothesis is that tourists from country set *i* are likely to visit country set *j* by virtue of being exposed to the cultures of these countries through the immigrants living in country set *i*. The results presented in Column 2 show that this feature is indeed present in the tourism data. As the number of immigrants to country *i* increases by 1%, then the tourist flows from country *i* to country *j* increase by 0.04%. This is a statistically significant effect of immigration on tourism. This finding is, to our knowledge, a first in the literature for the overall panel data. This coefficient is close to what Seetaram (2012a) and Dwyer, Burnley, Murphy, and Forsyth (1993) report for Australia; respectively around 0.03% and 0.06% increase in the international tourism demand. Similarly, for the European continent, Massidda et al. (2014) find increase in tourism ranges from 0.045% to 0.067% for Italy, whereas Leitão and Shahbaz (2012) offer similar levels of elasticity for Portugal. On the contrary, Genç (2013) finds the largest impact, around 0.20% for New Zealand. With the exception of Genç (2013), our results and those of the current literature are quite modest. A number of factors outlined in Mayda (2006) may be at play here in that it all depends on the percentage of the native population that is pro-immigration (multiculturalist) or anti-immigration (monoculturalist). As Mayda (2006) found, racism is highly correlated with anti-immigration feeling; a respondent who would rather not have as neighbour's individuals of a different race is more than 8 percentage points less likely to be in favour of an increase in immigration. Perhaps, they would be less likely in our context to visit the place of origin of these immigrants. However, when she incorporated the racism variable in her empirical model along with labour market factors, her finding that individuals are more likely to be pro-immigration in countries where the skill level of natives is relatively higher than that of immigrants remains robust. Unfortunately, in our case, we are not endowed with microeconomic survey data to be able to make such distinction.

We also conjecture that mere interaction between nationals and immigrants within the same country is not a sufficient reason for nationals to visit the immigrants' home country. After all, individuals are bounded rational and are also risk averse. Factors such as institutional quality, civil rights and the freedom of a tourist destination are often taken into consideration when decision to vacation is being made. These three variables were tested and the results are presented in Columns 3 to 5. All coefficient estimates are positive and statistically significant, confirming that these variables are indeed important when individuals select countries to visit. Institutional quality variable has a coefficient of 0.46, indicating the increase in the institutional quality in country *i* by 1 unit would increase the tourism flows to that country from country j by 4.6%. This coefficient is higher than what Alfaro et al. (2008) and Balli, Jean Louis, and Osman (2011) found, respectively 3.65% and 2.44%, when they looked into the relationship between capital flows and institutional quality. Even when all variables are modelled jointly, as per Column 6, the control variables remain significant with positive coefficients, and the adjusted R^2 passes from 38% to 46%. This improvement in the goodness of fit of the model points to the relevance of these control variables in explaining bilateral tourism flows in gravity models, a feature of the tourism data that seems to have been overlooked in the literature.

To test whether the results hold across subsamples, we have categorised country set *j* according to continent. Accordingly, we have reorganised the data into four subgroups, namely Asia, Africa, Latin America and Europe. We re-estimated Equation (1) over each subsample and present the results in Table 5. Except for civil liberty, we find all coefficients have the expected signs and are statistically significant for Asia. Macroeconomic stability variables (exchange rate and inflation volatility) are not significant for Latin American countries. It is worth noting that while the variables of interest (immigration and quality of institutions) underscore a significant effect on tourism flows for Asia and the Americas, the opposite holds for Africa and Europe, perhaps for totally different reasons. Our perusal of the data on institutional quality, civil liberty and economic freedom reveals that these indices are quite low and very similar across countries in Africa. The implication is that there is little or no value added for tourists in taking these variables into consideration when making decision to visit, unless there is political upheaval or looming wars. Egypt, for example, fits this profile quite well: despite its low index values, it remains one of the most important and the most visited touristic destinations. The same applies to sub-Saharan Africa. At the other end of the spectrum lies Europe, where all countries are of relatively the same quality and in close proximity to each other, so the small differences in the control variables do not impact tourism activities. The interpretation of the non-significance of the immigrant variable for both Africa and

Table 6
Dynamic panel data estimation.

	Whole sample	Asia–Pacific	Latin-America	Africa	Europe
Δln (*Tourist flows*$_{ij,t-1}$)	0.28 (0.03)***	0.27 (0.01)***	0.16 (0.01)***	−0.01 (0.05)	0.05 (0.01)***
Δln(*Import*$_{ij,}$)	0.12 (0.02)***	0.04 (0.003)***	0.02 (0.01)**	0.09 (0.02)***	0.14 (0.02)***
Δln(*Population*$_j$)	2.23 (0.65)***	5.43 (0.34)***	4.56 (0.62)***	10.07 (1.97)***	8.29 (1.25)***
Δln(*Gdpc*$_i$)	0.36 (0.05)***	0.54 (0.02)***	0.94 (0.04)***	0.46 (0.08)***	0.54 (0.08)***
Δ*SARS*	−0.01 (0.02)	−0.05 (0.01)***	−0.10 (0.01)***	0.01 (0.01)	−0.03 (0.06)
Δ*Inflation*$_j$	−0.03 (0.03)	−0.01 (0.05)	0.02 (0.05)	−0.01 (0.02)	−0.01 (0.06)
Δ*Exchange rate*$_j$	−0.08 (0.05)	−0.02 (0.01)**	−0.03 (0.05)	−0.03 (0.04)	−0.03 (0.01)***
Δ*Immigration*$_{ij}$	−0.03 (0.08)	0.08 (0.01)***	0.58 (0.11)***	−0.32 (0.30)	0.17 (0.27)
Δ*Institutional quality*$_j$	0.24 (0.03)***	0.08 (0.01)***	0.08 (0.01)***	0.03 (0.02)	0.34 (0.02)***
Δ*Freedom*$_j$	0.21 (0.09)**	0.14 (0.01)***	0.21 (0.04)***	–	0.18 (0.04)***
Δ*CL*$_j$	0.01 (0.02)	0.03 (0.08)	0.13 (0.02)***	−0.03 (0.04)	0.04 (0.04)
No. of observations	11877	2168	3179	4079	2461
Sargan statistic *p*-value	0.65	0.45	0.41	0.35	0.56
AB(1) test *p*-value	0.21	0.32	0.52	0.33	0.14
AB(2) test *p*-value	0.20	0.46	0.32	0.41	0.19

Notes: *, ** and *** indicate that the coefficient is significant at the 10%, 5% and 1% level respectively. Standard errors are reported in parentheses. See Table 1 for the variable definitions. Dependent variable: Δln (*Tourism flows*$_{ij}$ + *1*). For example, Asia–Pacific refers to the sample where country *i* is located only in the Asia–Pacific region.

Europe follows along the same lines. Given that Africa is poverty-stricken, with fewer attractions to offer to the world, African emigrants have not been successful in promoting their home countries as viable tourist destinations. Most importantly, Africans in OECD countries by and large work as low-skilled labourers and network with people of a similar income level who do not have enough savings for tourism activities overseas. With all the easy transportation offered, the variety in climate and the shorter distances between destinations, nationals of a particular country in Europe do not need to be influenced by immigrants coming from another European country to make the decision to visit that country. In summary, what we witness here in terms of the impact of immigrants and institutional quality on tourism flows in Europe and Africa is the typical problem known as *restriction of range* in statistics, where minor differences at the top or at the bottom of a distribution do not matter.

3.2. The dynamic panel data model

A notable feature of tourism flows is what the literature terms repeat visits to dominant tourism destinations (Alegre & Juaneda, 2006; Bowen & Clarke, 2009; Kotler, 1998; Kozak, Gnoth, & Andreu, 2010; Morrison, 2010; Pearce, 2005, 2012). In line with our research question, we postulate that the incentives of nationals to visit immigrants' homes may stem from the satisfaction obtained from prior trips and their perceived attractiveness of the places (Um, Chon, & Ro, 2006). As Naude and Saayman (2005) explain, static model estimations such as Equation (1) suffer from a loss of dynamic information. It is quite a serious model misspecification problem when persistent/reputation effects are omitted, such as when researchers choose to leave out a visitor's decision to return to a destination following a memorable and enjoyable experience in the previous year. Empirically, the ramification of not incorporating previous visits in the model tends to produce parameters that are overestimated as these capture both immediate/direct and lag/indirect effects. We take this issue into consideration by estimating a dynamic panel data model that incorporates the lag of the dependent variable, along with other variables' lags, as explanatory variables.

The dilemma with the inclusion of lagged dependent variables as regressors is that ordinary least squares no longer produce unbiased estimates due to the so-called endogeneity problem. One solution is to estimate the model differently, with lags of the dependent variable as instruments using the generalised method of moments of Arellano and Bond (1991), which yields consistent and efficient estimates of the parameters. The dynamic panel data model for the tourism flows can be represented as follows[8]:

$$\begin{aligned}\Delta Tourism_{ij,t} = {} & \beta_0 + \beta_1 \Delta Tourism_{ij,t-1} + \beta_2 \Delta X_{ij,t} \\ & + \beta_3 \Delta Immigrant_{ij,t} + \beta_4 \Delta INS, QUALITY_{j,t} \\ & + B_5 \Delta FREEDOM_{jt} + B_6 \Delta CL_{jt} + \varepsilon_{ij,t},\end{aligned} \tag{2}$$

Table 6 reports the first-step generalised method of moment's estimator of Equation (2). With *p*-values far above 5%, the Jarque–Bera statistic leads us to accept the null hypothesis of the normality of the residuals. In addition, we test for the autocorrelation and heteroskedasticity of the errors, and find evidence for heteroskedasticity. We correct for this problem using heteroskedasticity-corrected standard errors. In all three regressions, the first- and second-order correlation Arellano–Bond tests have *p*-values greater than 10%, thereby suggesting that there is not enough evidence to support the presence of autocorrelation. This battery of tests validates the use of lagged endogenous variables as suitable instruments. Furthermore, the *p*-values of the Sargan test of over-identifying restrictions fails to reject the null hypothesis that the instruments are exogenous in any of the model specified.

Table 6 shows that the lag value of the dependent variable is significant for the whole sample and most of the subsamples. Import levels, population and GDP per capita are also positive and significant, supporting the findings of Tables 4 and 5 Our key variable, immigration, remains a determinant of tourism flows only for Latin America and Asia. The underlying explanation of this finding is that changes in the immigrant levels are incremental and their effects are relatively small in influencing tourism flows. We find civil liberty matters only for Latin-America, while institutional quality and freedom matter for all but Africa. Overall, these results confirm our findings based on the static panel estimations discussed in Table 5.

4. Conclusion

This paper investigates whether nationals of immigrant-receiving countries are induced to visit immigrant-sending countries because they have been exposed to the camaraderie, conviviality and cultures of these immigrants. Using both static and

[8] With the dynamic model, variables that do not change over time (time-invariant variables), such as distance, common language and a colonial relationship between the origin and destination, are automatically dropped out.

dynamic panel data estimation techniques for a sample of 34 immigrant-receiving countries and 52 immigrant-sending countries, we show that this is indeed the case: tourism flows to countries are, by and large, influenced by the population of emigrants. The only exceptions are for Europe and Africa, which lie at opposite ends of the spectrum when the data are organised by continent. While the presence of the immigrant effect in tourism data is novel to the literature, we posit that the mere fact of observing immigrants and their way of life is not enough to induce nationals of the immigrant-receiving countries to take an aeroplane to visit the immigrants' homes. Other factors such as institutional quality; civil liberty and freedom also matter, along with gravity and macroeconomic variables. To test the verity of this assertion, we broaden the analysis and find that, when modelled either individually or jointly, immigration promotes tourism, and institutional quality, civil liberty and freedom, with varied exceptions across continents, matter in making a decision to visit immigrants' home countries for a vacation. This is a unique contribution to the existing literature to the best of our knowledge.

The message underlying this finding is that governments in immigrant-sending countries must do more to combat corruption, and to maintain and promote the rule of law. This is to take place in conjunction with investing in projects that improve the attractiveness of their country to the outside world as a way of complementing the advertising effect generated by the share of their population living abroad. This paper shows that tourists have a higher propensity to visit immigrants' home countries with higher standards of institutional quality, civil liberty and freedom. The test for every low-income country deprived of these attributes is to achieve a level similar to Europe where these values are so close to each other that it makes no difference as to where one goes.

Country list

Country set *j*				Country set *i*
Asia–Pacific	**Africa**	**Latin America**	**Europe**	Australia
Bangladesh	Algeria	Colombia	Albania	Austria
Cambodia	Botswana	Costa Rica	Azerbaijan	Belgium
Fiji	Egypt	Dominican Republic	Belarus	Canada
India	Kenya	Ecuador	Bulgaria	Czech Republic
Indonesia	Mauritius	El Salvador	Georgia	Denmark
Jordan	Morocco	Guatemala	Macedonia	Finland
Kyrgyz Republic	Nigeria	Honduras	Moldova	France
Lebanon	Tanzania	Jamaica	Serbia	Germany
Malaysia	Tunisia	Nicaragua	Ukraine	Greece
Mongolia	Uganda	Panama		Hungary
Myanmar	Zambia	Paraguay		Iceland
Nepal		Peru		Ireland
Pakistan		Suriname		Israel
Philippines				Italy
Syrian Arab Republic				Japan
Tajikistan				Korea
Thailand				Luxembourg
Vietnam				Mexico
Yemen				Netherlands
				New Zealand
				Norway
				Poland
				Portugal
				Romania
				Russia
				Singapore
				South Africa
				Spain
				Sweden
				Switzerland
				Turkey
				United Kingdom
				United States

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