

The effect of freedom on international tourism demand: Empirical evidence from the top eight most visited countries

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Abstract

The present study investigates the impact of freedom (i.e. the effects of political rights and civil liberties) on tourist arrivals for the eight countries with the highest tourist arrivals in 2016 (France, the United States, Spain, China, Italy, the United Kingdom, Germany, and Mexico), using annual data from 1998 to 2016, through advanced panel data methods. Notably, the key strengths of this study are as follows: (i) it examines the impact of institutional quality on international tourism demand for the most visited countries and (ii) it employs advanced panel data techniques, which have been suggested in recent years. We first constituted a freedom index using political rights and civil liberties data. Second, we performed cross-sectional dependence (CD) tests to examine whether there existed CD in the panel data set. After detecting the presence of CD, we used panel unit root and cointegration tests, which are robust to CD to avoid problems from spurious regression. Finally, we estimated long-run parameters of the empirical model through a panel data estimator that is capable of presenting efficient and unbiased output in the presence of CD. Our empirical findings show that the level of freedom may play a role in explaining the volume of international tourist arrivals. Theoretical and policy implications are discussed in the study, particularly with respect to the importance of rights and freedom in the context of international inbound tourist arrivals.

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civil liberties, freedom index, international tourism demand, most visited countries, panel data, political rights

Introduction

In the last two decades, the tourism industry has exhibited significant growth due to globalization and has become an essential source of economic development for many countries (Das and Dirienzo, 2010). The diversification of activities, such as entertainment, business, health, culture, adventure, health, sports, religious, wildlife, and nature, contributes to the growth of international tourism (Balli et al., 2016). Comparatively, the tourism industry has grown in recent years faster than other vital industries, including manufacturing and financial services (Lee, 2015). Additionally, despite the volatile global economic conditions and cyclical fluctuations from 1980 to the present date, the tourism industry has sustained growth (Saayman and Saayman, 2015). For example, the number of international tourist arrivals was 278 million in 1980, reaching about 1.19 billion, with tourism revenues achieving US\$1.18 trillion by 2015 (Demir and Gozgor, 2017). For many countries, the tourism industry provides substantial benefits: (i) increases in foreign exchange gains, (ii) decreases in poverty, (iii) employment and job opportunities, (iv) significant tax revenues to states, and (v) physical infrastructure and human capital accumulation (Tang, 2018). The literature presents a dearth of empirical evidence that tourism has a significant economic impact (see e.g. Cannonier and Burke, 2018; Dogru and Bulut, 2018; Hatemi-J et al., 2018; Zuo and Huang, 2018, among others).

Considering the economic impact of the tourism industry on a country, it is of great interest to researchers to determine which factors, specifically, affect international tourism demand (Khoshnevis Yazdi and Khanalizadeh, 2017; Saha et al., 2017). In addition, explaining the factors affecting tourism demand is critical for understanding past tourism demand and forecasting future tourism demand (Peng et al., 2015). Traditionally, the main determinants of tourism demand have been economic, including the income of tourists and the relative prices of goods and services (Dogru et al., 2017). In many demand models, gross domestic product (GDP) and inflation rates have been used in models to represent the income from tourist spending and relative prices, respectively (Meo et al., 2018). Other determinants, including macroeconomic indicators, such as inflation, financial development, openness, and exchange rate, have been included in research modeling tourism demand (Ghaderi et al., 2017; Kim et al., 2018; Martins et al., 2017; Muñoz, 2007; Peng et al., 2015; Rey et al., 2011; Shahbaz et al., 2017). In addition, models have considered noneconomic factors such as environmental and climatic conditions, including weather temperatures, precipitation, water temperature, and the number of sunny days, as essential determinants of tourism demand (see e.g. Goh, 2012; Moore, 2010, among others). In addition, factors indicating the quality of products and services (e. g. quality of accommodation, sports and entertainment activities, and kitchen variety) have been critical indicators of the infrastructural changes associated with the tourism demand (Li et al., 2017). Finally, models have incorporated situational factors (i.e. geographical distance (Ahn and Mckercher, 2015)), socioeconomic factors (i.e. demographic structure and education level (Stauvermann and Kumar, 2017; Vietze, 2011)), and cultural factors (i.e. differences/similarities in tourism demand models (Ahn and Mckercher, 2015; Lee et al., 2015)).

However, it is insufficient to limit explanatory factors to economic, climatic, infrastructural, situational, and so on, when developing demand models. Institutional factors, as Balli et al. (2016) remark, could also be crucial in the selection of tourism destinations for international tourists. Namely, one can observe in the extant tourism literature both theoretical and empirical studies on the relationship between institutional indicators (e.g. democracy, freedom, political stability, corruption, trust and security, and legal structure) and outbound tourism. For instance, Karwacki et al. (1997), Gholipour et al. (2014), and King and Tang (2009) focused on the relationship between freedom and outbound tourism. The findings of their study imply that outbound tourism is negatively associated with the level of freedom. Reasonably, institutional indicators may affect travelers' intentions not only related to outbound tourism demand but also inbound tourism demand. On the one hand, a destination's strong institutions and quality of governance point to a high level of security for that country. In which case, people feel more secure in the country (Tang, 2018), where incivilities can be more effectively resolved through legal mechanisms (Koçak and Uzay, 2018). Hence, the security of destinations may underlie international tourist arrivals (Ghaderi et al., 2017). On the other hand, widespread bribery and corruption in a country has been shown to disrupt the social and cultural images of a country and can adversely affect its tourism demand (Yap and Saha, 2013). Therefore, based on previous research that has evidenced the relationship between institutional factors and international tourism demand (see e.g. Balli et al., 2016; Ghaderi et al., 2017; Gozgor et al., 2017; Nunkoo and Smith, 2012; Nunkoo et al., 2012; Saha et al., 2017; Tang, 2018; Yap and Saha, 2013, among others), it is arguable that institutional quality will impact the inbound international tourist visits to a country.

In sum, the empirical literature has (i) focused on the institutional factors as determinants of tourism demand and increasingly attracted researchers' attention in the last decade and (ii) been conducted in spite of serious methodological problems. In the present study, using annual data spanning the period 1998–2016, we aim to investigate the impact of freedom on international tourism demand through advanced panel data methodologies for the eight most visited countries by travelers in 2016 (France, the United States, Spain, China, Italy, the United Kingdom, Germany, and Mexico, respectively) where tourism is one of the most significant employment and foreign exchange generating industries. We expect to contribute to the tourism-economics literature in three ways. First, to our knowledge, this is the first study investigating the impact of institutional quality on tourism demand for the most visited countries. In this respect, we examine whether institutional quality influences higher tourist arrival numbers in these countries. Second, understanding the factors that affect tourism demand in the most visited countries will provide relevant knowledge to authorities that will aid the development of tourism policies. Third, our study makes a significant methodological contribution in that it investigates the relationship between institutional indicators and tourism demand utilizing advanced panel data techniques. Myriad studies analyzing panel data in the tourism literature have not accounted for cross-sectional dependence (CD) across the countries included in their data set, consequently excluding vital information that otherwise influences the relationship between variables included in the empirical model. Moreover, they have not examined the time series properties of variables, namely unit root and cointegration; hence, resulting in a spurious regression problem. In sum, prior work may include inefficient and biased findings while examining the relationship between institutional factors and tourism demand. In the present study, we first perform CD tests to detect whether dependence exists across the countries in the sample. Next, we employ unit root and cointegration tests, which are robust to CD. The advanced panel data methods and techniques are thought to produce efficient and unbiased findings for the relationship between the level of freedom and tourism demand.

The remainder of the study is divided into the following sections: The second section provides a literature review. The model and data set are introduced in the third section. The fourth section describes the methodology and estimation techniques. Results from the estimation are reported in the fifth section. In the sixth section, conclusions are presented.

Literature review

In an effort to explain the mechanisms underlying higher tourist arrivals to countries with greater levels of freedom, there may be value in applying a motive behavior theory related to the institutional factors in a destination and outbound travel demand. Freedom would play a significant role in peoples' lives with the ability to change their behavior if that freedom were comprised; in turn, they become motivated themselves to make choices (i.e. motivation to travel to countries with more freedom than their country of residence; Brehm, 1966). The psychological reactance theory (PRT), emphasized by Brehm (1966), may be appropriate to frame broader resistance to institutional influence (e.g. social, political, and religious) and provoke behavioral outcomes (e.g. movement to countries with relative freedom). In PRT, the "reactance" is resistive and is inherently the capacitance of behavioral choice. Travel behavior would be promoted by "the motivational state of the person whose freedom is threatened" (Clee and Wichluand, 1980).

PRT was first applied in tourism studies by Font and Hindley (2017) relating to the impact of environmental awareness—how tourists' perceptions of climate change affect their inbound travel decisions. Similarly, it may have explanatory utility related to understanding outbound travel behavior; namely, travel to destinations motivated by innate resistance to countries' institutional factors, and, by extension, desire to engage in tourism activities amidst higher levels of freedom.

According to Tang (2014), it has been propounded that it is possible to change behavior (i.e. inspire a reaction) by targeting certain beliefs, which is consistent with both stimulus-response and reinforcement theories. Thus, tourism as reactance is the motivational mechanism that occurs when a person feels that their freedom is threatened. In sum, the PRT theory has two stages: the freedom and elimination of the threat (Magno et al., 2018). Chung et al. (2014) found that intrinsic motivations (escape and attractions) significantly predicted the threats of freedom. In the context of tourism, Font and Hindley (2017) used the PRT to explain how an impending reduction of one's freedom—induced by geographic changes brought about by climate change—changed their intention to travel to a particular destination. Thus, the aim of the current study is to examine whether freedom is a factor that influences international tourism demand under the application of PRT.

In our case, it may be that reduced freedom in countries motivates travel to particular destinations with political rights and civil liberties. The degree of reactance would be influenced by two factors: (1) inherent importance of the freedom to the traveler and (2) extent to which freedom exists in their country of residence (Brehm, 1966). In consideration of both these factors, first, the importance of freedom is highly subjective and, undoubtedly, varies among people. Relatedly, the need and or desire to travel to countries with higher levels of freedom, which is representative of the behavioral resistance (travel to a destination in which freedom is not threatened or traveling intentionally to destinations favored socially and politically).

In the tourism literature, it is emphasized that institutional factors, namely corruption, political uncertainties, political risks, and terrorism, have significant effects on tourism demand. In fact, empirical evidence for these effects has increased in recent years as observed by Gozgor et al.

(2017) and Saha et al. (2017). For example, a group of studies included investigations on the relationship between corruption and tourism (Das and Dirienzo, 2010; Demir and Gozgor, 2017; Vietze, 2011; Yap and Saha, 2013). According to these studies, corruption, which represents a weak institutional structure, has a negative impact on tourism demand. The second group of studies emphasizes the confidence environment in the country as the indicator of the institutional structure, focusing on the relationship between terrorism and tourism (Saha and Yap, 2014; Thompson, 2011; Yap and Saha, 2013). Results indicated that terrorism risk has a strong negative impact on tourism demand and associated sectors. The third group of studies explored the relationship between tourism and democratic indicators, such as political risk, political stability, civil rights, and political freedoms (Balli et al., 2016; Saha and Yap, 2014; Saha et al., 2017; Vietze, 2011; Yap and Saha, 2013). Findings revealed that advances at the democracy level have a significant contribution to tourism development. Furthermore, a study by Gozgor et al. (2017) took the military in political life into account and yielded that a reduction of military influence in the political arena is associated with a positive impact on the tourism sector in Turkey. In another notable study, Demir and Gozgor (2018) considered freedom of the press as an essential element of democratic institutions. In the panel data analysis of 160 countries, it was concluded that there is a positive relationship between freedom of the press and tourism development. Finally, the fourth group of studies investigated the impacts of government quality and governance on tourism demand (Lee, 2015; Tang, 2018). The estimation results showed that the increase in government quality and effective governance has a positive impact on tourism demand.

While the majority of recent studies employed panel data analysis (see Table 1), some studies use the cross-sectional analysis method (Das and Dirienzo, 2010; Lee, 2015). Ordinary least squares (OLS), fixed effects (FE), random effects (RE), feasible generalized least squares (FGOLS), and generalized moments method (GMM) are the most commonly employed estimators. However, there is yet to be a research study that tests the institutional indicators and tourism–demand relationship considering time series, namely unit root and cointegration, properties of variables. Thus, this critical gap in the literature is addressed in our study.

Relatedly, the literature is evaluated within the framework of specific countries. For example, Thompson (2011) and Balli et al. (2016) examined the relationship between institutions and tourism for developed and developing countries. Thompson (2011) shows that the negative impact of terrorism on tourism is higher in developing countries, while Balli et al. (2016) concluded that institutional quality has a positive effect on tourism in both developed and developing countries. Vietze (2011) examined the relationship between democracy levels of countries and tourism expenditures and found that people living in democratic countries spend more on tourism, on average. In prior studies, institutional factors and tourism demand are generally investigated using multiple countries in the analyses, while a small number of studies focus on a single country sample.

Table 1 summarizes the literature findings regarding the relationship between institutions and tourism.

Model and data set

Based on the explanations above, this study uses the following empirical model to examine freedom, as the institutional indicator, on tourist arrivals in the eight most visited countries by 2016:

$$\ln\text{TOUR}_{it} = \delta_{0i} + \delta_{1i}\ln\text{WGDP}_{it} + \delta_{2i}\ln\text{EXC}_{it} + \delta_{3i}\text{FRE}_{it} + \varepsilon_{it} \quad (1)$$

Table 1. Literature on the impact of institutions on tourism.

Study	Period	Country	Methodology	Results
Das and Dirienzo (2010)	2006	119 countries	Cross-section analysis	Corruption reduction and institutional structure contribute to the development of the tourism sector.
Vietze (2011)	Unbalanced panel	200 countries	Panel OLS	People living in countries with high democracy and low corruption spend more on tourism.
Thompson (2011)	1999–2003	60 countries	Panel OLS	Terrorism affects the tourism sector more in developing countries than in developed countries
Yap and Saha (2013)	1999–2009	139 countries	Panel FE	Political instability reduces tourist arrivals and tourism revenues. Terrorism and corruption negatively affect tourism demand.
Saha and Yap (2014)	1999–2009	139 countries	Panel OLS, FE, and RE	Political volatility and terrorism seriously affect the tourism sector.
Lee (2015)	2013	140 countries	Cross-section analysis	The quality of the government has a positive impact on tourism development.
Balli et al. (2016)	1995–2010	34 OECD countries and 52 middle-to low-income countries	Panel GMM	Institutional quality and freedom have a positive impact on the selection of tourism destinations.
Gozgor et al. (2017)	1984–2014	Turkey	Panel FE, RE, and GMM	A lower level of the relative military in politics positively affects the tourism inflows to Turkey.
Demir and Gozgor (2017)	1996–2014	Turkey	Panel FE, GMM, and Hausman–Taylor estimations	Corruption has a negative impact on inbound tourism to Turkey.
Saha et al. (2017)	1995–2012	110 countries	Panel FE	Civil liberties and economic freedom have positive effects on inbound tourism.
Demir and Gozgor (2018)	1995–2016	160 countries	Panel FE, GMM, and Hausman–Taylor estimations	Freedom of press positively affects inbound tourism.
Tang (2018)	2005–2015	Malaysia	Panel GMM	Governance and institutions positively affect inbound tourism.

OLS: ordinary least squares; FE: fixed effects; RE: random effects; GMM: generalized moments method; OECD: Organisation for Economic Co-operation and Development.

Table 2. Descriptive statistics for the variables.

Variable	Mean	Median	Maximum	Minimum	Standard deviation
lnTOUR	17.509	17.576	18.251	16.619	0.457
lnWGDP	9.116	9.130	9.252	8.960	0.089
lnEXC	4.623	4.607	4.875	4.380	0.095
FRE	0.760	1.000	1.000	0.153	0.315

In: natural logarithm, TOUR: number of tourist arrivals; WGDP: world GDP per capita; EXC: real effective exchange rate; FRE: freedom index; GDP: gross domestic product.

where ln, TOUR, WGDP, EXC, and FRE stand for natural logarithm, the number of tourist arrivals, world GDP per capita (constant 2010 USD), the real effective exchange rate (2010 = 100), and freedom index, respectively. In equation (1), lnWGDP and lnEXC are included in the empirical model as the control variables. An increase in lnEXC indicates a real appreciation in the domestic currency because the nominal exchange rate is defined as foreign currency units per unit of the domestic currency. In the study, freedom level is considered as the benchmark indicator of institutional quality. Freedom index is computed using the arithmetic mean of political rights and civil liberties ratings, which are based on a 1–7 scale (with 1 implying *the highest degree of freedom* and 7 signifies *the lowest degree of freedom*). Although an increase in freedom index resulting in a decrease in the degree of freedom is paradoxical, we accounted for this by utilizing a multiplicative inverse of this variable in the study. Therefore, the freedom index in the study is based on 0.143(=1/7) scale (with 1 implying *the highest degree of freedom* and 0.143 indicates *the lowest degree of freedom*). Hence, an increase in FRE represents an increase in the freedom index. An increase in income level can raise international tourism expenditures. In this study, we focus on the most visited countries in the world, attracting international tourists. We, therefore, argue that WGDP can capture income level in the empirical model of the study by following Martins et al. (2017) and Viljoen et al. (2018). Additionally, the real depreciation of a national currency leads to relatively low prices in the host country. Therefore, one can expect that tourism demand can be positively related to WGDP and negatively related to the real effective exchange rate. Finally, the freedom level of a country may increase the number of tourist arrivals toward this country because of the reasons expressed in the first and second parts of the study. Hence, we can expect δ_{1i} , δ_{2i} , and δ_{3i} to be positive, negative, and positive, respectively. We employ annual data for the eight most visited countries by 2016 (France, the United States, Spain, China, Italy, the United Kingdom, Germany, and Mexico, respectively) over the period 1998–2016. While data for tourist arrivals, WGDP, and real effective exchange rates are sourced from the World Bank Database (2018), data for freedom index are obtained from Freedom House (2018).

Table 2 exhibits descriptive statistics for the variables in the empirical model specified in equation (1). As is seen, all descriptive statistics of lnTOUR are higher than those of the other variables in the model. In addition, Figure 1 demonstrates the time plots of the variables in the empirical model. This figure provides information about the time series properties of the variables. Accordingly, lnTOUR has a downward trend, while lnWGDP replicates its trend as it is a country-invariant variable. Moreover, lnEXC exhibits some sharp movements around its meanwhile, and FRE sharply increases or decreases depending on the country's level of freedom.

Descriptive statistics and time plots allow researchers to investigate the variables in the empirical model preliminarily. However, to obtain efficient output, researchers should consider

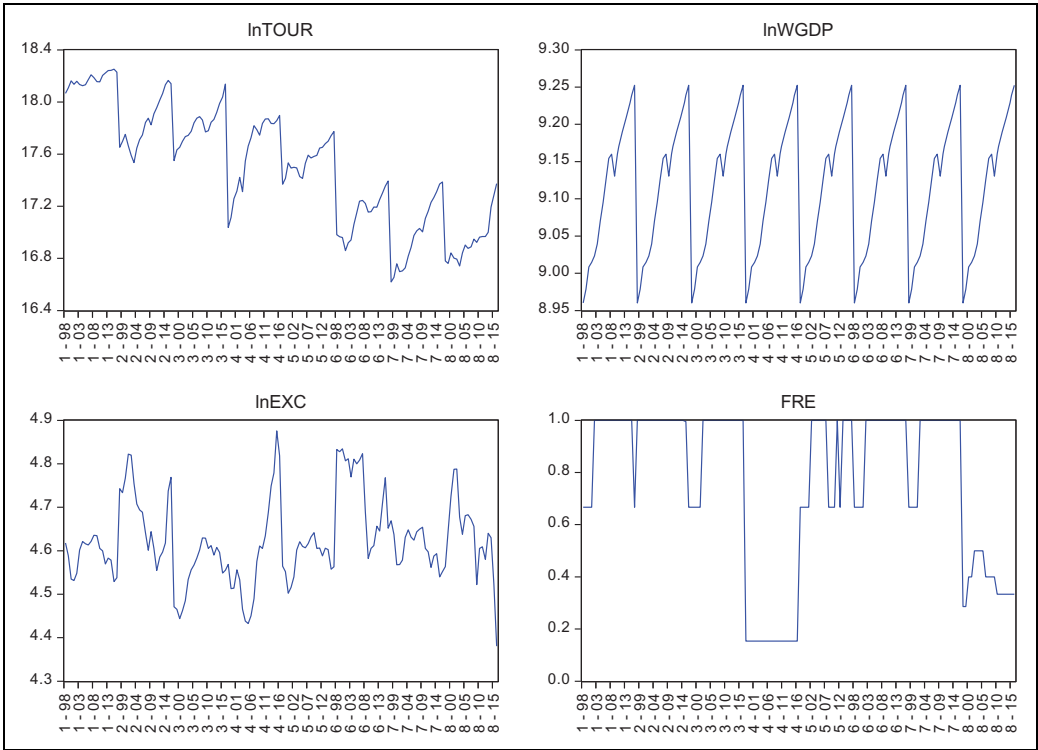


Figure 1. Plots of the variables.

some statistical/econometric methods, such as unit root and cointegration tests. The next section presents the econometric methods employed in the present study.

Estimation methodology

CD tests

To obtain efficient and unbiased output, the empirical analyses in the present study first test CD. CD signifies that a shock occurring in one country can affect other countries throughout the panel. Hence, we examine the extent of CD in the empirical model.

To test for CD, we perform the Lagrange multiplier (LM) test of Breusch and Pagan (1980), CD_{LM} and CD tests of Pesaran (2004), and the bias-adjusted LM (LM_{adj}) test of Pesaran et al. (2008). All CD tests examine the null hypothesis of no CD against the alternative hypothesis of CD.

CADF panel unit root test

In the present study, we employed the cross-sectionally augmented ADF (CADF) test produced by Pesaran (2007). This test is robust to the existence of CD. While applying this test, first, the individual CADF statistics for each country in the panel are computed, and the second cross-

sectionally augmented IPS statistic is calculated using the arithmetic mean of individual CADF test statistics. For this test, the null hypothesis of a unit root is tested against the alternative hypothesis of stationarity.

Westerlund (2008) panel cointegration test

Westerlund (2008) first considers the following data-generating process:

$$y_{it} = \alpha_i + \beta_i x_{it} + u_{it} \tag{2}$$

$$x_{it} = \delta_i x_{i,t-1} + \varepsilon_{it} \tag{3}$$

Then, Westerlund (2008) suggests estimating the differenced model:

$$\Delta u_{it} = \lambda'_i \Delta F_t + \Delta e_{it} \tag{4}$$

using the OLS residuals $\{\hat{u}_{it}\}$ and the principal components method. Westerlund (2008) estimates $\{e_{it}\}$ as $\hat{e}_{it} = \sum_{j=2}^t \Delta \hat{e}_{it}$. Then, he applies Choi’s (1994) Durbin–Hausman test to $\{\hat{e}_{it}\}$. The pooled counterparts are denoted as $\hat{\phi}$ and $\tilde{\phi}$. The Durbin–Hausman test statistics can now be obtained as follows:

$$DH_g = \sum_{i=1}^N \hat{S}_i (\tilde{\phi}_i - \hat{\phi}_i)^2 \sum_{t=2}^T \hat{e}_{it-1}^2 \tag{5}$$

$$DH_p = \hat{S}_N (\tilde{\phi} - \hat{\phi})^2 \sum_{i=1}^N \sum_{t=2}^T \hat{e}_{it-1}^2 \tag{6}$$

where $\hat{S}_i = \hat{\omega}_i^2 / \hat{\sigma}_i^4$, $\hat{S}_N = \hat{\omega}_N^2 / \hat{\sigma}_N^4$, and $\hat{\omega}_i^2$ and $\hat{\sigma}_i^2$ are the short- and long-run variance estimators using the OLS residuals from regressing $\{\hat{e}_{it}\}$ on $\{\hat{e}_{it-1}\}$, $\hat{\omega}_N^2 = \frac{1}{N} \sum_{i=1}^N \hat{\omega}_i^2$, and $\hat{\sigma}_N^2 = \frac{1}{N} \sum_{i=1}^N \hat{\sigma}_i^2$. Both statistics test for the null hypothesis of no cointegration against the alternative hypothesis of cointegration.

AMG estimator

Eberhardt and Bond (2009) propound the augmented mean group (AMG) estimator that considers CD. They begin with estimating the following model:

$$y_{it} = \beta'_i x_{it} + u_{it} \quad u_{it} = a_i + \lambda'_i f_t + \varepsilon_{it} \tag{7}$$

$$x_{mit} = \pi_{mi} + \delta'_{mi} g_{mt} + \rho_{1mi} f_{1mt} + \dots + \rho_{nmi} f_{nmt} + v_{mit} \tag{8}$$

where $m = 1, \dots, k$ and $f_{.mt} \subset f_t$

$$f_t = \phi' f_{t-1} + \epsilon_t \quad \text{and} \quad g_t = \omega' g_{t-1} + \epsilon_t \tag{9}$$

where x_{it} denotes the vector of covariates, f_t and g_t stand for unobserved common factors, and λ_i is country-specific factor loadings.

Table 3. CD tests.

Variable	Test			
	LM	CD _{LM}	CD	LM _{adj}
lnTOUR	394.276 ^a	47.877 ^a	19.810 ^a	47.654 ^a
lnWGDP	532.00 ^a	66.281 ^a	23.065 ^a	66.058 ^a
lnEXC	147.405 ^a	14.887 ^a	-0.840	14.664 ^a
FRE	140.162 ^a	13.919 ^a	7.840 ^a	13.697 ^a

LM: Lagrange multiplier; ln: natural logarithm, TOUR: number of tourist arrivals; WGDP: world GDP per capita; EXC: real effective exchange rate; FRE: freedom index; GDP: gross domestic product; CD: cross-sectional dependence.

^a 1% statistical significance.

Then, they produce the two-stage AMG estimator defined as follows:

$$\begin{aligned}
 \text{AMG-Stage (i)} \quad \Delta y_{it} &= b' \Delta x_{it} + \sum_{t=2}^T c_t D_t + e_{it} \\
 &\Rightarrow \hat{c}_t \equiv \hat{\mu}_t^\circ
 \end{aligned}
 \tag{10}$$

$$\begin{aligned}
 \text{AMG-Stage (ii)} \quad y_{it} &= a_i + b'_i x_{it} + c_i t + d_i \hat{\mu}_t^\circ + e_{it} \\
 \hat{b}_{\text{AMG}} &= N^{-1} \sum_{i=1}^N \hat{b}_i
 \end{aligned}
 \tag{11}$$

They first use a pooled first difference estimator regression, including T-1 year dummies at first differences. Then, this variable is incorporated in each *N* standard unit regression.

Estimation results

Table 3 reports the results for the CD tests. Accordingly, one can observe that the null hypothesis of no CD can be rejected. As we detected that there exists CD in the empirical model, we performed unit root and cointegration tests that take CD into account.

The results for the unit root tests are reported in Table 4. As lnWGDP is a country-invariant variable and follows the same movements for all countries in the data set, we checked the stationarity of this variable through the ADF unit root test of Dickey and Fuller (1981), which was developed for time series analyses. Besides, we employed the CADF panel unit root test for other variables in the study. As is seen, the null hypothesis of a unit root can be rejected for all variables in their first differences. In such a case, we may experience a spurious regression problem if we employ some conventional estimators, such as OLS, FE, RE, and FGOLS. Hence, not to be exposed to this problem, we investigated the cointegration relationship among variables in the empirical model through the cointegration approach developed by Westerlund (2008).

Table 5 exhibits the results for the panel cointegration test. Accordingly, while the DH_g test statistic indicates the rejection of the null hypothesis of no cointegration at a 1% level of significance, the DH_p test statistic implies there is no cointegration relationship among the variables included in the empirical model. Based on the finding of the DH_g

Table 4. Unit root tests.

Variable	Statistic	
	Level	First difference
lnTOUR	-1.516	-2.886 ^a
lnWGDP	-0.948	-3.704 ^b
lnEXC	-1.007	-3.102 ^a
FRE	-0.548	-2.449 ^b

ln: natural logarithm, TOUR: number of tourist arrivals; WGDP: world GDP per capita; EXC: real effective exchange rate; FRE: freedom index; GDP: gross domestic product.

^a1% statistical significance.

^b5% statistical significance.

Table 5. Westerlund (2008) panel cointegration test.

Test statistics		Critical values		
DH_g	DH_p	1%	5%	10%
15.368 ^a	-0.506	2.333	1.645	1.28

^a1% statistical significance.

Table 6. AMG estimator.

Variable	Coefficient	Standard error	t Statistics
lnWGDP	0.192	0.954	0.200
lnEXC	-0.504 ^a	0.151	-3.350
FRE	0.142 ^b	0.0796	1.790

ln: natural logarithm, TOUR: number of tourist arrivals; WGDP: world GDP per capita; EXC: real effective exchange rate; FRE: freedom index; GDP: gross domestic product; AMG: augmented mean group.

^a1% statistical significance.

^b10% statistical significance.

statistic, the present study detected that there is a cointegration relationship occurrence in the empirical model and that the long-run parameters can be estimated by way of the AMG estimator.

The findings of the AMG estimator for the panel are presented in Table 6. According to these findings, lnTOUR is not related to lnWGDP, while it is negatively related to lnEXC and positively related to FRE. Hence, the empirical findings infer that (i) WGDP appears not to be a considerable determinant of inbound tourism; (ii) real effective exchange rate is highly considerable for inbound tourism and relatively high prices stemming from a real appreciation in national currency result in a decrease in tourism demand; and (iii) freedom seems to be a considerable determinant of international tourism demand and countries with higher levels of freedom in the panel data set attract higher numbers of visitor arrivals.

Finally, we compared our results with the findings of the previous studies which examined the effects of democratic indicators on tourist arrivals. Accordingly, the findings of the present study concur with those of Yap and Saha (2013), Saha and Yap (2014), Balli et al. (2016), Saha et al. (2017), and Demir and Gozgor (2018), indicating freedom has a significant and positive impact on tourism demand. Indeed, our findings appear to corroborate the findings of the previous empirical literature. The distinguishing feature of the present study, however, is that it is methodologically more sound and yields these findings through more advanced panel data techniques (as was denoted previously).

Conclusion

The present study examined the influence of freedom on international tourism demand for the eight most visited countries using annual data from the period of 1998 to 2016. After employing CD tests and detecting the existence of CD, we ran unit root tests to determine the order of integration of the variables in the empirical model. Then, we performed the panel cointegration test propounded by Westerlund (2008) and explored the presence of a cointegration relationship among variables we included in the empirical model. Finally, we employed the AMG estimator suggested by Eberhardt and Bond (2009) to estimate long-run parameters. The findings of the AMG estimator indicated that freedom has statistically significant and positive impacts on tourism demand for the countries in the panel data set.

Thus, the findings signify that motivations for international tourists' travel to certain countries may be associated with their higher freedom levels; and consistent with the tenets of PRT, the levels of reactance are further influenced by factors including (i) the importance of the freedom to travelers and (ii) the extent to which the freedom exists in their origin country (Brehm, 1966). Freedom to travel and discover countries with higher levels of freedom is related to Burger's (2008) psychogenic needs. Recognition of the inherent "need" for certain political rights and civil liberties may explain the need to travel to countries with higher levels of freedom. The levels of freedom established in the travelers' own country of origin are the stimuli external to the individual (Burger, 2008), which may, in turn, intuitively influence the travelers' behavior of resistance (travel to a destination in which freedom is not threatened) or by social implication (traveling to other destinations favored both socially and politically). We argue that reactance may explain heightened demand for tourism and higher numbers in terms of visitors' arrivals in the countries that have higher levels of freedom. Thus, we hypothesized that higher levels of freedom, as measured by institutional indicators (i.e. the effects of political rights and civil liberties) in a country are associated with increases in international inbound tourism demand.

While some studies have examined the economic determinants, namely income, price, and exchange rate, of tourism demand, few empirical studies have examined the relationship between noneconomic, institutional factors, and demand. This study builds on the recommendations of Gholipour et al. (2014), in which levels of freedom increased tourism demand, by extending the application of freedom proxies (i.e. political rights and civil liberties) and their impact to inbound tourism demand across the eight most visited countries.

The findings of the present study present some considerable policy implications for government organizations, tourism ministries, and travel and tourism businesses. Firstly, government institutions should consider their policies with regard to peoples' rights and freedom to have some economic benefits from the point of inbound tourism. As described previously, the freedom index was calculated using the arithmetic mean of political rights and civil liberties ratings. While

'political rights' includes the electoral process, political pluralism, public participation, and functioning of government, 'civil liberties' includes freedom of expression and belief, associational and organizational rights, the rule of law, personal autonomy, and individual rights. Respectively, these indicators are essential to liberal democracy and substantive indicators for the institutional quality in a destination.

Secondly, introducing destination marketing campaigns targeted at promoting civic structures, and high tolerance among people supporting different ideologies and/or having different beliefs, can be beneficial in improving the destination attractiveness to potential visitors for both developing and developed countries.

Finally, tourism facilitators and travel businesses should promote the levels of freedom and democracy and characteristics of openness in countries to which they encourage international travel.

Ultimately, the empirical findings of our study should be evaluated in conjunction with certain limitations, which, in effect, provide topics for future empirical research. For instance, our study examined total visitor arrival figures to the eight most highly visited countries. For future empirical research, it could be useful to investigate the relationship between inbound tourism using disaggregated data including diverse segments of visitors (e.g. business, education, recreation, holiday, visiting friends and relatives) if the data are available across the countries as well as the countries which are most economically dependent on tourism.

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