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The effectiveness of the legal system and inbound tourism

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ABSTRACT

This paper investigates the impacts of the effectiveness of the legal system and protection of the property rights on tourism development using a panel data of 152 countries over the period 1995–2015. The paper considers the fixed-effects, Hausman–Taylor (HT), and system generalized method of moments (GMM) estimations and the results demonstrate that a higher level of legal system quality and better protection of property rights promote inbound tourism. Specifically, the results show that higher judicial independence and better enforcement of contracts enhance the development of tourism. The benchmark results are robust to focus on the different groups of countries and measures for tourism development as well as to exclude the outlier observations.

Introduction

There is abundant literature investigating the determinants of inbound tourism from a variety of perspectives. Various cultural variables, macroeconomic indicators, and travel health risks are used as possible drivers of the inbound tourism indicators (see e.g., Crouch, 1994; Dwyer & Forsyth, 1993; Kubickova, 2019; Lorde & Jackman, 2013; Peng, Song, & Crouch, 2014; Saha & Yap, 2014 & 2015; Song, Witt, & Li, 2009 & 2012; Wang, 2009). However, these factors do not adequately explain international tourism inflows in destination countries. The literature also embraces another dimension which focuses on the quality of institutions. The institutions are of critical economic significance to the operations of all economic sectors (Davis & Trebilcock, 2001). In the tourism sector, for instance, low quality of institutions increases uncertainty and transaction costs and influences the reputation of tourism destinations. The existing literature is mostly comprised of case studies examining the institutional mechanism in the tourism industry. Only a few studies have conducted cross-country research investigating the economy-wide institutional factors in affecting tourist inflows and revenues derived from international tourism (Das & Dirienzo, 2009; Nunkoo, Ramkissoon, & Gursoy, 2012; Saha, Su, & Campbell, 2017; Su & Lin, 2014). In line with this literature, we aim to examine the impact of informal institutions on tourism development. The main hypothesis of this paper is that the effectiveness of the legal system promotes the development of the tourism sector.

The existing literature has explored the "the institutional quality" dimension but mainly examines the informal institutions, which are unmodified social norms, customs, and beliefs (Holmes, Miller, Hitt, & Salmador, 2013; Marano, Arregle, Hitt, Spadafora, & van Essen, 2016; Williamson, 2000). There is a lack of papers investigating the formal institutions, which consist of formal laws, regulations, and policies (North, 1990; Williamson, 2000). Therefore, we mainly focus on formal legal institutions and their effects on inbound tourism. Legal institutions play a significant and independent role in economic development in both developed and

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developing countries as they are supposed to protect the civil rights of individuals from the assertive manners (Davis & Trebilcock, 2001). Furthermore, an economically efficient legal system can affect the tourism industry through various channels, such as the business costs of crime, enforcement of contracts, impartial courts, the integrity of the legal system, judicial independence, military interference in the rule of law and politics, protection of property rights, regulatory restrictions on the sale of real property, and reliability of the police.

At this juncture, to the best of our knowledge, there is no paper in the literature that analyses how the efficiency of the legal system affects tourism development via quantitative data. Our paper aims to contribute to the literature by filling this gap via a carefully-designed quantitative method using a dataset with a greater period and higher cross-sections (countries). For this purpose, we focus on the panel dataset of 152 countries for the period from 1995 to 2015 to investigate the effects of the index of the legal system and the protection of property rights (including its various measures) on the number of tourist arrivals and the tourism receipts. We utilize several panel data estimation techniques and implement various robustness checks to achieve the objective of the paper. We observe that a higher quality of the legal system and better protection of property rights enhance inbound tourism.

The remainder of the study is organised as follows. Section 2 provides the literature review. Section 3 clarifies data, econometric estimation procedure, and empirical model. Section 4 represents empirical findings. Section 5 implements the robustness analysis of the baseline findings. Section 6 argues the potential implications of the findings. The last section provides the conclusion.

Previous literature

Several papers have found that national culture plays a major part in determining the perception of corruption and crime by employing Hofstede's cultural dimensions (Achim, 2016; Davis & Ruhe, 2003). Geographical attributes, such as the coastline per total land area, landlocked countries, total land area, and the total surface area are influential factors in inbound tourism (Bigano, Hamilton, Lau, Tol, & Zhou, 2007; Llorca-Rodríguez, García-Fernández, & Casas-Jurado, 2019). Furthermore, exchange rate, trade openness, and GDP per capita have been reported to affect tourism development as well (Blake, Sinclair, & Soria, 2006; Dritsakis, 2004; Kim, Chen, & Jang, 2006). At the same time, climate change and natural disasters are contributing to the downturn in the worldwide tourism (Gossling & Hall, 2006; Hall, 2010).

Corruption, a leading indicator of informal institutional quality, is also of great concern in relation to their impact on tourism development (Das & Dirienzo, 2010; Demir & Gozgor, 2017; Lv & Xu, 2017; Propawe, 2015; Saha & Yap, 2015). Considering the fixed-effects and dynamic GMM estimations, Neumayer (2004) observes that conflict, human rights violations and political violence are negatively related to tourism development in more than 100 countries.

In addition, crime is a significant driver of inbound tourism. For example, using the time-series analysis and the monthly dataset, Moyo and Ziramba (2013) show that measures of crime negatively affect inbound tourism in South Africa for the period from March 2003 to April 2011. Altindag (2014) finds the negative impact of crime on international tourism revenue and the number of tourist arrivals in the panel dataset of 35 European countries for the period from 1996 to 2003. Mehmood, Ahmad, and Khan (2016) also observe that there is a dynamic and a negative relationship between the crime and inbound tourism in the United States (U.S.) for the period from 1984 to 2013. Santana-Gallego, Rossello-Nadal, and Fourie (2017) demonstrate that both crime and terrorism are negatively associated with the international tourist arrivals in the panel dataset of 171 countries for the period from 1995 to 2013.

From an institutional lens, the impact of institutional quality on tourism development has also been investigated to some extent. For example, there are several papers that analyse press freedom, a representative indicator for the quality of institutions that can significantly affect tourism indicators (Das & Dirienzo, 2009; Demir & Gozgor, 2019). Balli, Balli, and Louis (2016) also find that the economic freedom and the index of civil liberty are the significant variables in choosing the destination country based on a pooling dataset of 34 OECD countries and lower income economies for the period from 1995 to 2010. Similarly, Saha et al. (2017) investigate the effects of civil liberties on inbound tourism and report that the index of civil liberties promotes inbound tourism.

To the best of our knowledge, the prior literature focuses on the indicators of informal institutional quality such as democracy, economic freedom, civil liberty and trust and power as aforementioned, rather than indicators of formal institutional quality except Detotto, Giannoni, and Goavec (2017) and Gozgor, Demir, and Bilgin (2017). Detotto et al. (2017) conduct a cross-country study to examine the relationship between good governance and the performance of the tourism industry based on a dataset of 100 countries between 2002 and 2012. Gozgor et al. (2017) analyse the impact of the military interference in the rule of law and politics on tourist inflows from 71 countries in Turkey using the panel dataset for the period from 1984 to 2014. It is noteworthy to emphasize that neither has paid sufficient attention to the legal system and its impact on the tourism industry. According to Gray (1991) and Rausser (1992), the economic vigour of a country requires the establishment of a legal system (including rules, procedures, and institutions) in which legal rights, especially property and contractual rights, are enforced and protected. The informal rules and institutions may serve as substitutes for the legal enforcement and protection of property and contract rights but with hidden cumulative costs (Posner, 1998). As a result, the legal system itself, other than the informal substitutes, should be explored as well. The existing literature lacks a comprehensive capture of the various aspects of the legal system.

In this paper, in order to fill in this gap, we follow the literature (Alesina & Giuliano, 2015) to measure (indices of the legal system and the protection of property rights) and to consider a wider range of legal institutional qualities and their effect on inbound tourism. Specifically, we consider the measures of indicators of the efficiency of the legal system, such as the enforcement of contracts, judicial independence, impartial courts, the integrity of the legal system, the protection of property rights and regulatory restrictions on the sale of real property, business costs of crime and reliability of the police as well as the military interference in the rule of law and politics.

Furthermore, previous papers have generally applied the fixed-effects estimations; however, we use various panel data estimators.

We also consider both time-invariant and time-variant controls, analyse the economies at different income levels, employ different indicators of institutional quality and tourism development, and exclude the outlier observations. In this backdrop, we aim to fill those gaps in the literature by utilizing several econometric methods.

Data, empirical model, and econometric estimations procedure

Data

The paper includes an unbalanced panel dataset over the period 1995–2015 in 152 countries.[1] We also consider 88 high-income economies and 64 low-income economies following the income classification of the World Bank in 2018. A list of countries is reported in Appendix A.

The data for the index of the legal system and protection of property rights are collected from the Economic Freedom dataset of Fraser Institute provided by Gwartney, Lawson, and Hall (2018). According to Gwartney et al. (2018), the legal system and the security of the property rights are the most important function of government and the protection of the rights of individuals and property is the key element of economic freedom. Specifically, an efficient legal system should provide not only the rule of law and the protection of property rights but also an independent and unbiased judicial system as well impartial and effective enforcement of the contracts (Voigt, Gutmann, & Feld, 2015). The index of the legal system and the security of property captures the average of nine indicators: "i) judicial independence, ii) impartial courts, iii) protection of property rights, iv) military interference in rule of law and politics, v) integrity of the legal system, vi) legal enforcement of contracts, vii) regulatory costs of the sale of real property, viii) reliability of police, ix) business costs of crime." The index values of those variables, which measure the efficiency of the legal system and security of property rights, are also adjusted to reflect inequalities in the legal treatment of women. In short, the index of the legal system and the security of property rights in the Economic Freedom in the World (EFW) dataset provides comprehensive and comparable measures for the quality of legal institutions in various countries. In the related dataset, 10 and 0 are the maximum and the minimum scores and higher scores indicate the higher efficiency of the legal system and the security of property rights.

According to the data, the efficiency scores of the legal system and the security of property rights are changing over time and across countries. For instance, South Africa improved scores while Brazil experienced a fall over the decade. The dependent variable of the empirical model is the number of tourist arrivals (in millions) (i.e. inbound tourism), and the related data are obtained from the World Development Indicators (WDI) database of the World Bank (2019). We also use another indicator of inbound tourism that is the tourism receipts from international inbound visitors (million current U.S. Dollars), including payments to national carriers for international transport (World Bank, 2019).

Following the previous literature, various controls are also considered. Specifically, we consider macroeconomic indicators, such as the GDP per capita (current U.S. Dollars), nominal exchange rate (official exchange rate domestic currency per U.S. Dollars), and (nominal) trade openness. These data are collected from the WDI database. We also consider geographical control variables, such as the coastline (km), the coastline per total land area, landlocked countries (dummy variable if a country is landlocked, it is equal to one, otherwise it is zero), total land area (km^2), and total surface area (km^2). These data are obtained from the World Fact Book database of the Central Intelligence Agency (CIA). All of these variables are considered in the natural logarithm form in the estimations. Finally, we consider the number of heritage since inclusion in the World Heritage List can attract more tourists, and thus it can also be a significant driver of the inbound tourism (Huang, Tsaur, & Yang, 2012). The related data for the World Heritage List are collected from the United Nations Educational, Scientific and Cultural Organization. In addition, descriptive statistics are reported in Table 1.

Empirical model

Following the previous papers (e.g. Balli et al., 2016; Gholipour, Tajaddini, & Nguyen, 2016), we estimate the following model specifications to determine inbound tourism:

$$LogINBTO_{it} = \alpha_0 + \alpha_1 LogLSPR_{it} + \alpha_2 X_{it} + \varepsilon_{1it} \quad (1)$$

$$LogINBTO_{it} = \beta_0 + \beta_1 LogINBTO_{it-1} + \beta_2 LogLSPR_{it} + \beta_3 X_{it} + \varepsilon_{2it} \quad (2)$$

In Eqs. (1) and (2), i denotes the countries and t denotes the period under concern. $LogINBTO_{it}$ is log international tourist arrivals. $LogINBTO_{it-1}$ is lagged log tourist arrivals and captures the "persistence effect", that is tourists have gone to a place and they may have a desire to visit the same place once again (Gallego, Rodríguez-Serrano, & Casanueva, 2019). $LogLSPR_{it}$ is the log of the legal system and the property rights index. In addition, we consider the index of the legal system and property rights in the panel data estimation. Finally, X_{it} denotes "vector of controls". ε_{it} represents an error-term.

[1] Note that the EFW dataset does not provide the indices of legal effectiveness in 1996, 1997, 1998, and 1999. Therefore, the dataset includes the data for 1995 as well as from 2000 to 2015.

Table 1
Descriptive summary statistics.

Variables	Definition	Data source	Mean	Standard deviation	Minimum	Maximum	Observations
International tourism: number of tourist arrivals	Logarithmic form	World Bank, World Development Indicators	14.06	1.846	7.972	18.24	2381
Legal system and property rights	Logarithmic form	Fraser Institute, Economic Freedom: Gwartney et al. (2018)	1.666	0.336	0.150	2.260	2209
Judicial independence	Logarithmic form	Fraser Institute, Economic Freedom: Gwartney et al. (2018)	1.483	0.569	−1.790	2.280	1840
Impartial courts	Logarithmic form	Fraser Institute, Economic Freedom: Gwartney et al. (2018)	1.478	0.402	−0.690	2.270	2205
Protection of property rights	Logarithmic form	Fraser Institute, Economic Freedom: Gwartney et al. (2018)	1.629	0.391	−0.140	2.260	1858
Military interference in rule of law and politics	Logarithmic form	Fraser Institute, Economic Freedom: Gwartney et al. (2018)	1.745	0.600	−1.970	2.230	2198
Integrity of the legal system	Logarithmic form	Fraser Institute, Economic Freedom: Gwartney et al. (2018)	1.755	0.434	−1.790	2.230	1979
Legal enforcement of contracts	Logarithmic form	Fraser Institute, Economic Freedom: Gwartney et al. (2018)	1.398	0.525	−1.210	2.230	1792
Regulatory restrictions on the sale of real property	Logarithmic form	Fraser Institute, Economic Freedom: Gwartney et al. (2018)	1.891	0.425	−0.920	2.230	1673
Reliability of police	Logarithmic form	Fraser Institute, Economic Freedom: Gwartney et al. (2018)	1.624	0.398	0.190	2.260	1330
Business costs of crime	Logarithmic form	Fraser Institute, Economic Freedom: Gwartney et al. (2018)	1.715	0.394	0.060	2.270	1330
Gross domestic product per capita (current USD)	Logarithmic form	World Bank, World Development Indicators	8.435	1.575	4.751	11.62	2488
Nominal exchange rate (domestic currency per USD)	Logarithmic form	World Bank, World Development Indicators	3.290	2.729	−5.896	22.62	2270
Trade openness (exports plus imports as share of GDP)	Logarithmic form	World Bank, World Development Indicators	4.338	0.629	−1.771	6.092	2463
Number of heritage	Level	United Nations Educational, Scientific and Cultural Organization	4.853	6.961	0.000	52.00	1968
Total surface area (km^2)	Logarithmic form	Central Intelligence Agency, The World Fact Book	10.94	2.073	5.768	16.65	2510
Total land area (km^2)	Logarithmic form	Central Intelligence Agency, The World Fact Book	11.90	2.074	5.768	16.61	2510
Coastline (km)	Logarithmic form	Central Intelligence Agency, The World Fact Book	7.069	1.756	1.411	12.21	1969
Coastline per total land area	Logarithmic form	Central Intelligence Agency, The World Fact Book	1.240	14.73	0.000	185.2	2512
Landlocked countries	Dummy variable	Central Intelligence Agency, The World Fact Book	0.216	0.411	0.000	1.000	2512
International tourism: tourism receipts (current USD)	Logarithmic form	World Bank, World Development Indicators	20.38	2.234	13.45	26.18	2398

Estimation procedures

Mainly, we estimate the equations above by implementing the fixed-effects estimators and their consistency have been checked by Hausman test. Given that the robust standard-errors (clustered at country level) are used, implementing a traditional Hausman test can create the size distortions. Therefore, we run the "robust Hausman test" in order to avoid potential size distortions.

In some cases, fixed-effects estimators can be weak since they ignore time-invariant tourism variables. At this point, the paper implements the estimator of Hausman and Taylor (1981), aka the HT estimations, which also captures the time-invariant variables. In short, we implement both the fixed-effects and the HT econometric methods to handle potential "omitted variable bias" in estimations.

Furthermore, the fixed-effects estimations assume a "strict exogeneity" that is valid when we do not have any lagged dependent variables in the fixed-effect estimations. Specifically, there could be endogeneity issues, which terminate the strict exogeneity assumption. Using the system GMM estimations proposed by Arellano and Bover (1995) and Blundell and Bond (1998), we address potential endogeneity issues. Specifically, there could be an endogeneity bias (also known as the omitted variable bias) which is caused by the exclusion of lagged tourist arrivals as the right-side variable. Indeed, past tourist arrivals can significantly affect the current tourist arrivals the, issue known as the persistence effect. To put it differently, inbound tourism can be persistent over the period under concern (Gallego et al., 2019).

The empirical model in Eq. (2) is estimated by the system GMM estimation technique since it is able to eliminate the potential problems of the autocorrelation and the presence of different orders of integration in the panel datasets. We also run the two-stage estimation procedure with the consistent estimators to avoid potential multicollinearity between controls. The instruments are collapsed, as this is recommended by Roodman (2009), two assumptions must be fulfilled to yield the efficient results in the estimations. The first assumption is that instruments have to be uncorrelated to the error term. Secondly, instruments have to be correlated with instrumented variables. In this regard, we need to find the evidence in favour of the first-order autocorrelation in the residuals; however, second-order autocorrelation must be rejected. Furthermore, the Sargan test statistic must not reject the null hypothesis in order to avoid potential over-identification problem. We include time fixed-effects when we run the system GMM estimators and address the potential unobservable heterogeneity since there could be other heterogeneities across the countries during the coverage period that can drive tourism indicators.

Empirical findings

Findings from baseline (fixed-effects) regressions for the impact of the legal system and property rights on the number of tourist arrivals are reported in Table 2.

The findings of the robust Hausman test show that findings from the fixed-effects estimators are consistent. Specifically, Column I report findings of a direct impact of the legal system and property rights (in the log) on the number of tourist arrivals (in the log) without considering controls. The direction of the relationship is positive and significant (0.54) and a high level of the legal system

Table 2
Results of the Benchmark Fixed-Effects Estimators.

Explanatory variables	(I)	(II)	(III)	(IV)	(V)	(VI)
Log gross domestic product per capita	–	1.529***	1.524***	1.519***	1.528***	1.539***
		(0.048)	(0.047)	(0.047)	(0.047)	(0.047)
Log nominal exchange rate	–	0.051***	0.051***	0.051***	0.051***	0.051***
		(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Log trade openness	–	0.192***	0.189***	0.187***	0.193***	0.195***
		(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
Log total land area (km^2)	–	–	8.383***	–	–	–
			(1.965)			
Log surface land area (km^2)	–	–	–	8.701***	–	–
				(1.962)		
Number of heritage	–	–	–		0.803	–
					(0.954)	
Legal system and property rights (Log)	0.539***	0.179***	0.180***	0.183***	0.181***	–
	(0.074)	(0.061)	(0.061)	(0.061)	(0.061)	
Legal system and property rights (level)	–	–	–	–	–	0.029**
						(0.014)
Constant term	13.37***	0.005	−100.9***	−105.0***	11.43***	0.041
	(0.074)	(0.388)	(23.67)	(23.70)	(0.074)	(0.388)
Observations	2134	1859	1857	1857	1853	1859
Number of countries	154	152	150	150	150	152
R-squared	0.026	0.440	0.446	0.446	0.441	0.438
Robust Hausman test	27.4 [0.00]	36.2 [0.00]	27.1 [0.00]	24.5 [0.00]	23.1 [0.00]	29.7 [0.00]

Notes: Dependent variable is the log number of tourist arrivals. The robust standard errors clustered at the country levels are in the parentheses. The year fixed-effects and the country fixed-effects are included in the regressions. The probability values are in the brackets. *** and ** indicate the statistical significance at 1% and 5% levels, respectively.

and property rights yield to a higher level of tourist arrivals.

Column II provides the findings of the impact of the legal system and property rights on the number of tourist arrivals by adding macroeconomic controls. Findings in Columns (III) to (V) control not only for macroeconomic control variables but also geographical indicators and the number of heritage. Finally, as an alternative, the findings in Column (VI) use the "level form" of the legal system and the property rights index rather than the legal system and the property rights index in the "logarithmic form". We find the positive and the statistically significant impact of the legal system and the property rights index on the tourist arrivals is valid when we use different controls and specifications of the legal system and property rights index. Put it differently, the main evidence is also statistically robust as we include several control variables. Specifically, the baseline finding in Column (III) indicates that a 1% rise in the legal system and property rights index yields to a 0.18% higher inbound tourism.

When we look at the control variables, the per capita income, nominal exchange rate, and trade openness are positively associated with the tourist arrivals, as expected. If income per capita rises, a country can attract a higher number of tourists. The positive impact of nominal exchange rate means that as a domestic currency gets cheaper, a country attracts a higher number of tourists. The positive impact of trade openness indicates that greater economic relationships with foreign countries are positively associated with the number of tourists. These results are in parallel with the previous results for inbound tourism (Balli et al., 2016; Gholipour et al., 2016). In addition, that number of heritage in the World Heritage List is positively related to inbound tourism, but its coefficient is not significant. This evidence indicates that the number of heritage has a trivial impact on tourists' decisions when they choose visiting destinations, in line with the previous results of Huang et al. (2012).

Furthermore, the findings of the impact of the legal system and property rights index on the tourist arrivals in low-income and lower-middle-income economies as well as in the upper middle income and high-income economies are reported in Table 3. In addition, the findings from the impact of the legal system and property rights index on the tourist arrivals in the non-OECD countries and the OECD countries are provided in Table 3.

Columns (I) and (II) provide the findings in the low-income and lower-middle-income economies and Columns (III) and (IV) provide the findings in the upper-middle income and high-income economies. Columns (V) and (VI) provide findings from the non-OECD countries and Columns (VII) and (VIII) provide findings from the OECD countries. Findings from the robust Hausman test show that the findings from fixed-effects estimators are consistent. All of these findings are in line with the baseline evidence that is the legal system and the property rights index is positively associated with the number of tourist arrivals, not only in the low-income and lower-middle-income economies and the upper-middle income and high-income economies but also the non-OECD and OECD countries. The evidence is robust to consider different indicators of the legal system and the property rights index but the level form of coefficient in the legal system and the property rights index is statistically significant at the 10% level in all groups of countries. In addition, we observe that the impact of the legal system and property rights index is higher in the low-income and lower-middle-income economies than the upper-middle income and high-income economies. Similarly, the impact of the legal system and property rights index is greater in non-OECD countries than in OECD economies. This evidence implies that achieving a higher level of legal system and property rights is especially a significant tool for the policymakers of the poorer economies to attract a higher number of tourists.

The findings of the baseline findings of the impact of the sub-indicators of the legal system and property rights measure on the number of tourist arrivals are reported in Table 4.

The findings from the robust Hausman test show that the findings of the fixed-effects estimations are consistent. The findings in Table 4 show that all aspects of the index of the legal system and property rights are positively associated with the number of tourist arrivals. To put it differently, the higher values for the sub-indexes of the legal system and property rights enhance inbound tourism. The marginal impact of regulatory restrictions on the sale of real property (0.153) is at the highest level, and the marginal impact on the integrity of the legal system is at the lowest level (0.026). In addition, most of the sub-index of the legal system and property rights are statistically significant with the exceptions of indices of the impartial courts and the integrity of the legal system. We also consider the various robustness analyses to check the validity of the baseline findings.

Robustness analysis

Different estimation procedures

Table 5 provides findings from system GMM estimators (Columns I and II) and HT estimators (Columns III and IV) to analyse the robustness of the baseline findings to the different estimators and the model specifications. To include a potential persistence of inbound tourism, we consider the lagged international tourist arrivals following also the findings of unit root test. Doing so, we also address a possible endogeneity problem by running a system GMM estimator of Arellano and Bover (1995) and Blundell and Bond (1998). According to the findings of the Sargan test, a possible over-identification problem is rejected. Furthermore, the findings of the autocorrelation test indicate that there a first-order autocorrelation; however, a second-order autocorrelation is not rejected. In short, it is found that the necessary assumptions have been satisfied. The coefficient of the lagged inbound tourism is 0.71, and it is statistically significant. This evidence indicates the medium-level persistency in the international tourist arrivals.

In addition, the results of the control variables are similar to the baseline findings of the fixed-effects estimations, and the coefficients of controls are significant. In Column (I), we obtain the coefficient of the legal system and property rights in the natural logarithmic form is positive and statistically significant (0.34). This evidence implies that a 1% rise in the legal system and property rights is associated with a 0.34% rise in international tourist arrivals. Similarly, in Column (II), we find the coefficient of the legal system and property rights in the level form is also positive and statistically significant (0.11).

Table 3
Results of the benchmark fixed-effects estimators: different country groups.

Explanatory variables	Low- and lower middle income economies (I)	Low- and lower middle income economies (II)	Upper middle- and high income economies (III)	Upper Middle- and High income economies (IV)	Non-OECD countries (V)	Non-OECD countries (VI)	OECD countries (VII)	OECD countries (VIII)
Log gross domestic product per capita	1.715***	1.718***	1.363***	1.368***	1.547***	1.556***	1.310***	1.309***
	(0.096)	(0.095)	(0.048)	(0.048)	(0.055)	(0.054)	(0.102)	(0.101)
Log nominal exchange rate	0.051***	0.051***	0.094***	0.090***	0.049***	0.049***	0.122***	0.123***
	(0.014)	(0.014)	(0.025)	(0.025)	(0.011)	(0.011)	(0.043)	(0.042)
Log trade openness	0.143***	0.144*	0.368***	0.368***	0.186***	0.189***	0.348***	0.340***
	(0.046)	(0.046)	(0.057)	(0.057)	(0.036)	(0.036)	(0.102)	(0.102)
Legal system and property rights (log)	0.184**	–	0.111**	–	0.299***	–	0.276**	–
	(0.086)		(0.051)		(0.067)		(0.133)	
Legal system and property rights (level)	–	0.048*	–	0.025*	–	0.049*	–	0.044*
		(0.026)		(0.014)		(0.026)		(0.026)
Observations	793	793	1066	1066	1449	1449	360	360
Number of countries	64	64	88	88	117	117	35	35
R-squared	0.389	0.387	0.534	0.532	0.431	0.429	0.545	0.545
Robust Hausman test	20.4 [0.00]	27.3 [0.00]	26.5 [0.00]	30.1 [0.00]	28.2 [0.00]	25.6 [0.00]	23.7 [0.00]	29.9 [0.00]

Notes: Dependent variable is the log number of tourist arrivals. The constant term is included in the regressions, but the coefficients are not reported. The robust standard errors clustered at the country levels are in the parentheses. The year fixed-effects and the country fixed-effects are included in the regressions. The probability values are in the brackets. ***, **, and * indicate the statistical significance at 1%, 5%, and 10% levels, respectively.

Table 4
Results of the benchmark fixed-effects estimators: sub-indexes of the legal system and property rights.

Explanatory variables	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
Log gross domestic product per capita	1.481*** (0.043)	1.556*** (0.047)	1.388*** (0.048)	1.573*** (0.047)	1.495*** (0.047)	1.601*** (0.168)	1.573*** (0.189)	1.552*** (0.197)	1.551*** (0.199)
Log nominal exchange rate	0.064*** (0.009)	0.051*** (0.010)	0.061*** (0.009)	0.046*** (0.010)	0.048*** (0.010)	0.030*** (0.008)	0.025*** (0.008)	0.029*** (0.007)	0.026*** (0.007)
Log trade openness	0.318*** (0.045)	0.199*** (0.033)	0.298*** (0.045)	0.206*** (0.033)	0.168*** (0.031)	0.439*** (0.105)	0.350*** (0.109)	0.106* (0.062)	0.106* (0.063)
Log judicial independence	0.146*** (0.028)	–	–	–	–	–	–	–	–
Log impartial courts	–	0.029 (0.040)	–	–	–	–	–	–	–
Log protection of property rights	–	–	0.142*** (0.035)	–	–	–	–	–	–
Log military interference in rule of law and politics	–	–	–	0.119* (0.061)	–	–	–	–	–
Log integrity of the legal system	–	–	–	–	0.026 (0.041)	–	–	–	–
Log legal enforcement of contracts	–	–	–	–	–	0.138* (0.077)	–	–	–
Log regulatory restrictions on the sale of real property	–	–	–	–	–	–	0.153** (0.070)	–	–
Log reliability of police	–	–	–	–	–	–	–	0.152** (0.063)	–
Log business costs of crime	–	–	–	–	–	–	–	–	0.098** (0.041)
Observations	1541	1855	1559	1859	1638	1499	1399	1105	1105
Number of countries	143	152	145	152	136	139	139	132	132
R-squared	0.517	0.439	0.514	0.445	0.454	0.398	0.387	0.398	0.394
Robust Hausman test	29.2 [0.00]	24.9 [0.00]	25.7 [0.00]	24.5 [0.00]	21.8 [0.00]	23.6 [0.00]	22.3 [0.00]	27.1 [0.00]	26.2 [0.00]

Notes: Dependent variable is the log number of tourist arrivals. The constant term is included in the regressions, but the coefficients are not reported. The robust standard errors clustered at the country levels are in the parentheses. The year fixed-effects and the country fixed-effects are included in the regressions. The probability values are in the brackets. ***, **, and * indicate the statistical significance at 1%, 5%, and 10% levels, respectively.

Table 5
Results of the benchmark regressions: system GMM and the Hausman–Taylor estimators.

Explanatory variables	System GMM (I)	System GMM (II)	Hausman–Taylor (III)	Hausman–Taylor (IV)
Lagged log tourist arrivals	0.701*** (0.082)	0.713*** (0.083)	–	–
Log gross domestic product per capita	0.667*** (0.169)	0.651*** (0.172)	1.514*** (0.049)	1.513*** (0.048)
Log nominal exchange rate	0.062* (0.032)	0.079* (0.042)	0.046** (0.020)	0.049** (0.020)
Log trade openness	0.542*** (0.103)	0.561*** (0.103)	0.155*** (0.034)	0.156*** (0.034)
Log coastline (km)	–	–	0.492*** (0.177)	0.529*** (0.193)
Log coastline per total land area	–	–	−0.002 (0.014)	−0.002 (0.014)
Landlocked countries	–	–	−0.580 (0.534)	−0.642 (0.539)
Legal system and property rights (log)	0.341*** (0.125)	–	0.202*** (0.070)	–
Legal system and property rights (level)	–	0.110** (0.043)	–	0.032** (0.014)
Observations	1494	1494	1482	1482
Number of countries	139	139	118	118
Wald-chi^2	3232.5	2917.2	1257.1	1242.1
AR (1) test p-value	[0.000]	[0.000]	–	–
AR (2) test p-value	[0.293]	[0.271]	–	–
Sargan statistic p-value	[0.255]	[0.267]	–	–

Notes: Dependent variable is the log number of tourist arrivals. The constant term is included in the regressions, but the coefficients are not reported. The robust standard errors clustered at the country levels are in the parentheses. The probability values are in the brackets. ***, **, and * indicate the statistical significance at 1%, 5%, and 10% levels, respectively.

Table 6
Findings of the robustness checks and the sensitivity analysis.

Type of analysis	Variables	All countries
Results of the benchmark regressions	Legal system and property rights (log)	0.179*** (0.061)
	Legal system and property rights (level)	0.029** (0.014)
Different measures of tourism development: log tourism receipts	Legal system and property rights (log)	0.235*** (0.076)
	Legal system and property rights (level)	0.041** (0.017)
Excluding the extreme units of log tourist arrivals	Legal system and property rights (log)	0.190*** (0.058)
	Legal system and property rights (level)	0.033** (0.013)
Excluding the extreme units of legal system and property rights measures	Legal system and property rights (log)	0.187*** (0.069)
	Legal system and property rights (level)	0.021* (0.011)
Excluding the Latin American and Caribbean countries	Legal system and property rights (log)	0.205*** (0.075)
	Legal system and property rights (level)	0.033* (0.017)
Excluding the East and South Asian countries	Legal system and property rights (log)	0.185*** (0.063)
	Legal system and property rights (level)	0.029** (0.014)
Excluding the Sub-Saharan African countries	Legal system and property rights (log)	0.123** (0.061)
	Legal system and property rights (level)	0.016* (0.009)

Notes: Dependent variable is the log number of tourist arrivals. The constant term, the log gross domestic product per capita, the log nominal exchange rate, and the log trade openness are estimated but their coefficients are not reported. The year fixed-effects and the country fixed-effects are also included in the regressions. The robust standard errors clustered at the country levels are in the parentheses. ***, **, and * indicate the statistical significance at 1%, 5%, and 10% levels, respectively.

We also attempt to solve a possible omitted variable bias and include the time-invariant variables (log coast in km, log coastline per total land area, and the dummy variable for the landlocked countries). Doing so, we implement the HT estimators to analyse the impact of the index of the legal system and property rights on the international tourist arrivals and the results are reported in Columns (III) and (IV). Taking the other papers into consideration, the per capita income, nominal exchange rate, and trade openness are treated as endogenous variables in the HT estimators. The findings of the control variables are similar to the baseline regressions, and all main control variables are positively associated with the international tourist arrivals and the coefficients are significant. Analysing time-invariant controls, the coefficient of the coastline (km) in the natural logarithmic form is found as significant (at the 1% level) and it is positively associated with the international tourist arrivals. Although the log coastline per total land area and the dummy variable for landlocked countries are negatively related to the international tourist arrivals as expected, their coefficients are statistically insignificant. Specifically, Column (III) provides that the coefficient of the index of the legal system and property rights is positive and statistically significant (0.20). This evidence implies that a 1% rise in the index of the legal system and property rights press is related to a 0.2% rise in the international tourist arrivals. Similarly, in Column (IV), we observe the coefficient of the legal system and property rights in the level form is also positive and statistically significant (0.03). Overall, the effects of the legal system and property rights on the international tourist arrivals are positive and statistically significant as we tackle a possible endogeneity and the omitted variable problems in model specifications by implementing different estimators and adding time-invariant and time-varying controls.

Robustness to the outliers

Table 6 provides the next robustness analyses, which consider another indicator of the development of the tourism sector. We use the log of international tourism receipts rather than the log of the number of international tourist arrivals. The findings are similar to the baseline results that are the index of the legal system and property rights is positively associated with the development of the tourism sector.

We also implement the robustness analysis, which excludes the outlier observations for inbound tourism and the index of the legal system and property rights. Following Demir and Gozgor (2019), we describe the outliers as observations, "which are more than two standard deviations away" from the average. Besides, the effects of the legal system and property rights on international tourist arrivals can depend on the countries in different regions. Therefore, we count out the observations in Asia, Latin America, and Sub-Saharan African countries to check the sensitivity of the baseline findings. Doing so, we run the baseline regressions by excluding observations in each continent at one time. Baseline results remain robust when we exclude extreme observations and the observations in each continent. At this point, the baseline findings are not utilized by extreme observations and are not dominated by observations from related regions.

Overall, the findings of the sensitivity analysis indicate that greater legal system quality and better protection of property rights promote inbound tourism and their coefficients are significant in each and every case.

Discussion and policy implications

The findings imply that for the purpose of developing the tourism industry, countries need to enhance the legal system quality and provide better protection of property rights. It is more beneficial for the lower-income countries than their OECD counterparts to carry out legal reforms since the potential gains are greater for the poorer countries, consistent with the findings in Das and Dirienzo (2010) and Posner (1998).

In details, a growth in the tourism industry is accompanied with a higher judicial independence and a better enforcement of contracts, a lower level of regulation on the restrictions on the sale of real property and a lower cost of crime and military interference in the rule of law and politics, in line with the previous findings of Moyo and Ziramba (2013) and Gozgor et al. (2017).

Higher judicial independence helps to more effectively solve conflicts and disputes when tourists and tourism companies face legal problems. Policymakers may need to increase judicial salaries to attract well-educated and honest lawyers. But it would be costly for the poorer countries with scarce resources. Alternatively, countries may alter the structure of judicial compensation by adjusting up the generous pension that is no longer available if the judge is removed from office for incompetence. Another change worth considering is to have judges sit in panels rather than by themselves. But it would increase costs, too.

In countries where the enforcement of contracts is higher, damages are more likely to be compensated when tourists and tourism companies want to make claims of infringement of legal rights. Posner (1998) suggest adopting a system of efficient rules for the existing inefficient institutions to administer, which saves money and time in comparison to heavily investing in upgrading the existing legal institutions. For example, policymakers may enact rules that certain disputes during tourism seasons can be referred to binding arbitration to avoid lengthy judicial procedures, or entitling the winner of a judgment for damages to receive interest from the date the suit was filed to bypass the cumbersome judicial discussions. The poorer countries may adopt foreign laws from well-structured economies and adjust them to fit into local customs since there is no need to start from scratch.

Lower regulatory restrictions on the sale of real property can increase tourism-related business activities, such as building hotels and facilities like shopping malls and making estate sales to foreigners. As a result, the number of relatives and friends from their countries can be expected to increase. Policymakers may need to simplify the regulatory procedure of selling properties to foreigners. However, these decisions should be made with caution as foreign procurement of lands may raise costly concerns. A higher crime leads to an increase in the costs since firms in the tourism sector can demand a higher insurance premium to cover the cost of possible crime incidents (Moyo & Ziramba, 2013). The increase in the weight of the military in social life can create ambiguity and uneasiness and tourists can dismantle their travels to these countries (Gozgor et al., 2017). In addition, countries with strong military interventions can channel resources from tourism investments to finance military activities that will lead to a reduction in tourism investments and infrastructure spending in tourism (Weaver, 2011). Policymakers may consider applying strict criminal laws and controlling military-related activities during the tourist seasons. Once again, the country-specific conditions need to be meticulously analysed before any decisions are made.

Briefly speaking, there is a range of approaches for policymakers of various countries to consider if they want to achieve a higher level of legal system quality and better protection of property rights to enhance the tourism industry. They need to understand there is a trade-off between benefits and costs and make decisions based on the specific conditions in a specific country.

Conclusion

In this paper, we examined the effects of the legal system and the protection of property rights on inbound tourism in the panel dataset of 152 countries for the period from 1995 to 2015. For this purpose, we implemented not only the fixed-effects estimators but also the system GMM estimators to solve a possible endogeneity problem. We also utilized the Hausman–Taylor method to solve a potential omitted variable problem. In addition, we used several model specifications, and the findings show that promoting the efficiency of the legal system and the protection of property rights is positively associated with inbound tourism. We also performed several robustness checks and analysed the economies at the different development level. We also addressed a potential omitted variable problem by considering various geographical and macroeconomic controls. Furthermore, we focused on the sub-indexes of the legal system and property rights. Finally, we performed various robustness analyses by excluding outlier observations and excluding countries in different continents. Our baseline results are robust to perform all of these robustness analyses and the sensitivity check.

In countries with higher efficiency of the legal system and property rights, legal institutions can quickly and rightly protect the civil rights and property of all individuals from aggressive manners. Therefore, enhancing the well-defined property rights of individuals (especially foreigners) can be a significant policy tool to promote inbound tourism. The current paper does not actually suggest that tourists take the legal system and property rights into account when they choose their destinations, but enhancing institutional quality may work in attracting more international tourists. Overall, the results indicate that a higher efficiency of the legal system and property rights can be a significant policy tool for providing the sustainability of tourism development. Future studies can focus on specific large economies (e.g. China, the United Kingdom, and the United States) to investigate the impact of institutions on tourism indicators.

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Appendix A. List of countries in the dataset

A.1. 88 high-income countries (those with a Gross National Income (GNI) per Capita Higher than $3956)

Albania, Algeria, Argentina, Australia, Austria, Azerbaijan, Bahamas The, Bahrain, Barbados, Belgium, Belize, Bosnia and

Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Dominican Republic, Estonia, Fiji, Finland, France, Gabon, German, Greece, Guyana, Hong Kong, Hungary, Iceland, Iran, Ireland, Israel, Italy, Jamaica, Japan, Kazakhstan, Korea Republic, Kuwait, Latvia, Lebanon, Lithuania, Luxembourg, Macedonia FYR, Malaysia, Malta, Mauritius, Mexico, Montenegro, Namibia, the Netherlands, New Zealand, Norway, Oman, Panama, Paraguay, Peru, Poland, Portugal, Qatar, Romania, Russian Federation, Saudi Arabia, Serbia, Seychelles, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Suriname, Sweden, Switzerland, Thailand, Trinidad and Tobago, Turkey, the United Arab Emirates, the United Kingdom, the United States, Uruguay, and Venezuela.

A.2. 64 Low-income countries (those with a GNI per Capita Less than $3956)

Angola, Armenia, Bangladesh, Benin, Bhutan, Bolivia, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Central African Republic, Chad, Congo Democratic Republic, Congo Republic, Cote d'Ivoire, Egypt, El Salvador, Ethiopia, Gambia The, Georgia, Ghana, Guatemala, Guinea, Guinea-Bissau, Haiti, Honduras, India, Indonesia, Jordan, Kenya, Kyrgyz Republic, Laos, Lesotho, Madagascar, Malawi, Mali, Moldova, Mongolia, Morocco, Mozambique, Myanmar, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Papua New Guinea, the Philippines, Rwanda, Senegal, Sierra Leone, Sri Lanka, Swaziland, Tajikistan, Tanzania, Togo, Tunisia, Uganda, Ukraine, Vietnam, Yemen Republic, Zambia, and Zimbabwe.

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