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THE EFFECT OF INSTITUTIONAL INNOVATIONS ON TOURISM SPENDING IN DEVELOPED COUNTRIES *

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Abstract. The new institutional economy deals with the study of innovations that can be reflected in various national sectors, including tourism. The objective of the presented study was to evaluate the significance of the effects of institutional innovations on tourism spending. The analyses included data from databases of the World Travel & Tourism Council (business tourism spending (BTS), leisure tourism spending (LTS), domestic tourism spending (DTS) and visitor exports (foreign spending) (VEFS)) and the Global Innovation Index reports published by Cornell University, INSEAD and WIPO (political environment, regulatory environment, business environment) from 2010 to 2019 for 36 OECD countries (excluding Colombia). Panel regression models (pooling, fixed, random) adjusted by robust estimation were used for analytical processing. The findings indicate that LTS was the category with the highest spending and BTS was the category with the lowest spending. One of the most important findings is that institutional innovations in the business environment have the greatest effect on tourism spending. It can be concluded that with an increase in innovations in the business environment, an increase in BTS, LTS and VEFS can be expected. In the political and regulatory environments, it is not possible to talk about demonstrable effects in general.

Keywords: tourism; innovation; expenditure; political environment; regulatory environment; business environment

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1. Introduction

Institutional economics is similar to standard neoclassical economics, it emphasizes the importance of markets, competition and limited resources. However, unlike neoclassical economics, institutional economics assumes that people have imperfect information, limited mental abilities, and that they are exposed to uncertainties and risks in their transactions. In order to reduce risk and costs, people create rules, contracts, and standards (Shu-ping and Xiao-meng, 2017).

One of the authors who has emphasized on the significance of institutions and institutional change in the development and performance of economies was Douglas C. North in his book 'Institutions, Institutional Change and Economic Performance'. He defined institutions as the rules of the game in a society, or, more formally, the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social or economic (North, 1990). Among the fundamental sources of long-run economic development, differences among institutions and the institutional change have received considerable attention in recent years (Law & Azman-Saini, 2012; Rybáček, 2018).

Innovation is the output of the innovation process and represents the realization of an invention (Vokoun, 2019). Hjalager (2002) divided the innovations as follows: production innovations, classical process innovations, process innovations of information handling, management innovations and institutional innovations. The last ones are the subject of our research.

2. Literature Review

As found by Huang et al. (2019) institutional configurations in the tourism sector have received a lot of attention from the political economy perspective, which views institutions as the power relations that govern the interactions of stakeholders influencing tourism policy decisions. This finding is also supported by authors such as Beritelli and Laesser (2011), Moscardo (2011), Nyaupane and Timothy (2010). Kim et al. (2018) argue that increases in institutional quality reduce transaction costs and risks faced by both suppliers of international tourist services and tourists.

As described further in the Material and Methods section, the institutional innovations are examined through the approach of the Global Innovation Index (GII), namely the first pillar of its innovation input sub-index that consists of political environment, regulatory environment and business environment (Cornell University, INSEAD & WIPO, 2020b).

First, we focus on the political and regulatory environment. Researchers who argue against government regulations often do so from the neoclassical economic assumption that markets are always superior (Weitzman, 1974; Diaz et al., 2020). The neoclassical economic theories have contributed to a better understanding of tourism, but alternative economic perspectives such as new institutional economics will help to extend the boundaries of our knowledge (Song et al., 2012). In reality, public-sector planners do not have absolute control, since tourism is largely a demand-driven activity, where markets seek destinations and activities to satisfy their wants and needs (McKercher, 1999; Majerová and Fernandez, 2020), but there is a space to control and influence the tourist market. Or, as McKercher (1999) also found out, that each tourism model argues that tourism can be controlled. It also means that at odds with neo-classical theories, there should be some interaction. The choice of policy approach and regulatory framework rests on two fundamental factors: that government decisions should be based on good sound knowledge and that this knowledge should be above politics (Dredge, 2017). Political stability is a basic element of the political environment. We have found Das and Dirienzo's (2010) study as the

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first to analyse the impact of corruption on tourism adopting an economic perspective. Likewise, Saha et al. (2017) examined that the civil liberties and economic freedom were positively associated with inbound tourism. From the point of view of the issue of country stability and tourism, a research in this area has been conducted by Causevic and Lynch (2013) who investigated the influence after the political instability in Bosnia and Herzegovina on the tourism development. As expected, they suggested reconsidering the administration and governance introduced to address political conflict in the country as it failed to achieve collaboration between divided communities. But another interesting finding was that the tourism industry appeared to be ahead of other sectors in encouraging partnership between sides previously in conflict. Similar results have been found by Liu and Pratt (2017) when examining the security risk through the instability caused by terrorism. Their main finding was that from a global view, this kind of security risk does not have an adverse impact on tourism demand in the long run. On the other hand, the political motives for controlling tourism are usually very strong, if they are subtle, it is because governments do not want to overly release statements and information about their hidden political agendas (Nyaupane & Timothy, 2010). The study performed by Mosedale (2010) extended the economic analyses of institutions studies in reducing the uncertainty and transaction cost for the tourism sector by adopting a broader perspective on the quality of governance institutions. This perspective views governance quality as broadly defined by the effectiveness of the government in policy formulation, the ability to formulate and implement sound policies and regulations and the ability to promote norms in the society to obey the rules, fulfil the contracts and minimize the violence (Huang et al., 2019). Therefore, it can be assumed that the regulatory environment is another component of institutional innovations that could affect tourism.

We also focus on the business environment. Looking at the business environment from a broader perspective, it can be said that the business environment could be recognized as the various phenomena owing to the organization control, which embraces a series of resources and actors that influence the forms, management, and fate of enterprises (Duncan, 1972; Machová and Vochozka, 2019; Vochozka et al., 2020a). Among other business effects, Gani and Clemes (2020) showed that a country's domestic business environment can influence trade in services, such as attracting visitors for business purposes. Their research was based on the hypothesis that countries engaged in easing the process of business formation will attract international investors, resulting in the establishment of more businesses. It can be postulated that it is like a closed circle, if business environment affects the tourism sector (Gani & Clemes, 2020), the tourism sector affects the economic growth (Min et al., 2016; Sequeira & Nunes, 2008; Song et al., 2012), the economic growth affects the business environment in the meaning of institutional innovations (that is our idea of further investigation in the tourism sector). In this context, Sul et al. (2020) stated that the tourism-related business environment significantly affects destination competitiveness from visitor amounts and travel spending. The spending is the item to be examined in this study. Also interesting for research are innovations that respond to local and regional conditions due to climate change, weather, manifestations of negative impacts of human activity on the environment, and public health, which affect in particular the perception of the quality of the environment for recreational tourism (Kirschenstein et al., 2020; Vorobyeva et al., 2020; Nechaj et al., 2019).

Some recent researchers concluded that determining the main factors affecting the business environment of tourism is conducive to maintaining the continuous business benefits and tourism growth (Morant-Martínez et al., 2019; Zhu et al., 2020). Tourism demand is predominantly measured by the number of arrivals and the level of tourist spending (receipts), along with their variations, in per capita terms (Song et al., 2010). Tourism is also related to innovations in the business environment for sustainable and safe transport (Kelemen et al., 2018), resp. within the municipality of management in the Smart approach to mobility and transport at the local and regional level, and safety management education also for the support of business and recreational tourism (Kelemen & Jevcak, 2018).

According to the definition of the Word Travel and Tourism Council, tourism relates to the activity of travellers on trips outside their usual environment with a duration of less than one year. We look at the tourism spending

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related to all aspects of such trips. In this study, the effect of institutional innovations on tourism spending is examined through the spending in business tourism, domestic tourism, leisure tourism, outbound tourism (outbound travel), inbound tourism (visitor exports).

There are many kinds of business tourism: individual trips, group trips, displacements at events (Meetings, Incentives, Conventions, Exhibitions – MICE), team building and training trips (Nicula & Elena, 2014). Business tourism represents a growing segment of the international tourism market and it is considered as one of most desirable forms of tourism development at destinations worldwide (Dragicevic et al., 2012; Rogerson, 2015). Also, this is the reason why it needs innovations, to keep up with the trend. For example, the authors Dragicevic et al. (2012) pointed to the case of Vojvodina that even if it might become a competitive business tourism destination, some innovations are needed.

Domestic tourism continues to be the largest part of worldwide travel spend (as in 2019 it was 71.3%), continues to support opportunities by spreading development and regional economic benefits and building national pride (based on the data from WTTC, 2020b). Also, Massidda and Etzo (2012) concluded that comparing domestic tourism with international flows, it is prevalent in most countries in terms of its economic contribution and also in terms of size.

We have to distinguish 'leisure' and 'leisure tourism', where leisure is just a spending of free time and travel is the distinguishing mark (Graburn, 1989). The authors Min et al. (2016) have made an empirical study, which resulted in the findings that leisure tourism contributes to economic growth, but only at an early stage of economic development, its contribution becomes weaker as the economy develops. A leisure tourism also strongly depends on the seasonality, as Zheng and Zhang (2013) discovered in their study, the third quarter is the most favourable leisure tourism season. These results of seasonality are in accordance with the statements of Sheldon and Var (1985) and refute the exclusion of seasonality by the authors Nomani (1998) and Hong et al. (1996).

The outbound tourism spending can be affected by various factors. Some of the authors (such as Gozgor & Demir, 2018; Vietze, 2011) examined the macroeconomic perspectives and identified the following factors: economic factors, institutional quality (such as civil rights, political stability, effective governance, the level of corruption and freedom to speak), sociological factors and tourism information. The institutional quality factor gives an assumption to examine the effect of institutional innovations on tourism.

Inbound tourism is an opposite of outbound tourism. The determinants of inbound tourism are examined in several studies. Some authors identified the potential uncertainty sources affecting tourism development such as conflicts, political instability, security, and terrorism (Ghaderi et al., 2017; Saha & Yap, 2014; Saha et al., 2017; Ganjour et al. 2020; Rebhun, 2021; Vorobeva & Dana, 2021). But the economists dealing with tourism mostly use market demand theory analysing the demand and spending (Demir et al., 2019). Combining these two views should be interesting.

The issues discussed above and explored further in the article are not very widely developed in scientific studies. In any case, institutional innovations play an important role in the economy. Nevertheless, a lack of research efforts can be observed in examining the effects of institutional innovations in various areas of economic life, including tourism as a key sector of the economy. This issue has not been sufficiently examined and research is needed to fill this gap.

Vochozka et al. (2019) effectively use artificial neural networks in connection with the future state of the world. Their learning ability, as well as more extensive nonlinear statistical modeling and the potential to process larger volumes of data is highly desirable (Vochozka, 2017; Kalinová, 2021; Vochozka et al., 2020b). The applicability

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of neural networks can be included in complex economic areas (including tourism sector), which is next positive (Vrbka et al., 2019; Stehel et al., 2019). It can be said that neural networks are thus a great promise for the future as a broad-spectrum analytical tool with a short-term prediction rate, as stated by Rousek and Mareček (2019), Rowland et al. (2021) and others.

3. Methodology, Variables and Data Collection

As is clear from the well-known theory, tourists' spending, which is translated into the revenues of tourism businesses, make a significant contribution to the national economy. Also, spending can be taken into account in terms of the predictor of economic development; and therefore, this key element should not be overlooked in research. The research effort in this study is focused on demonstrating the effects of institutional innovations on tourism spending.

Accordingly, the main objective of the presented study was to evaluate the significance of the effects of institutional innovations on tourism spending. Secondary data were used to achieve this objective. These data can be divided into two groups, namely the data on institutional innovations and the data on tourism spending. Data determining institutional innovations were obtained from the Global Innovation Index report (from 2011 to 2020) published by Cornell University, INSEAD and WIPO (2020a), these were the individual GII sub-indices presented below. The Global Innovation Index report has been published since 2007 (1st edition), but the first versions did not contain a sufficient number of countries and the methodology was also developing. For this reason, data from reports published in 2011 (4th edition) and later were used in this research. It should be noted that these data were assigned to the data on tourism spending with a one-year lag (i.e. the data on institutional innovations form 2011 were assigned to the data on tourism spending from 2010). In terms of the research focus of this study, three indicators were included as independent variables, namely the political environment (Political), the regulatory environment (Regulatory) and the business environment (Business). These indicators are measured by an index that can take theoretical values from 0 to 100. In Global Innovation Index report, the political environment consists of two indices: (1) the index of political, legal, operational or security risk, which replaces the indicator of political stability and safety indicator, reflecting more on the likelihood and severity of political, legal, operational or security risks affecting business operations; (2) the index representing the quality of public and civil services, policy formulation, and implementation. The regulatory environment is based on three indices focused on: (1) capturing perceptions on the government's ability to formulate and implement coherent policies to support private sector development of the private sector; (2) evaluating the extent to which the rule of law prevails (e.g. contract enforcement, property rights, police, courts); (3) evaluating the cost of redundancy dismissal as the sum, in wage weeks, of the cost of advance notice requirements added to severance payments due when terminating a redundant worker. The business environment includes two aspects that directly affect private entrepreneurial endeavours by using the World Bank indices on the ease of starting a business and the ease of resolving insolvency (based on the recovery rate recorded as the cents on the dollar recouped by creditors through reorganization, liquidation, or debt enforcement/foreclosure proceedings (Cornell University, INSEAD & WIPO, 2020b).

The second group of variables was represented by tourism spending. These data were obtained from the World Travel & Tourism Council (WTTC, 2020a) database, while the oldest data were from 2010 and the most recent from 2019. Specifically, the analytical processing included: (1) business tourism spending (BTS) that consists of spending on business activities in a country by domestic residents and foreign visitors; (2) leisure tourism spending (LTS) that consists of spending on leisure travel in a country by domestic residents and foreign visitors; (3) domestic tourism spending (DTS) that consists of domestic residents' spending on business and leisure activities in a country; and (4) visitor exports (foreign spending) (VEFS) that consist of foreign visitors' spending on business and leisure activities in a country, including spending on transport, but excluding international spending on education (WTTC, 2020a). The World Travel & Tourism Council provides only raw data (in billions

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(1 000 000 000) USD per country), and for this reason an adjustment was necessary. In the first step, the individual variables were converted per capita. Population data were obtained from the Organization for Economic Co-operation and Development (OECD) database (OECD, 2020). The subsequent data adjustment consisted in reducing differences in purchasing power and prices. The variable Purchasing Power Parities for gross domestic product (GDP) per capita in current PPPs (index for OECD countries, OECD average = 1) was obtained from the OECD.stat database (OECD, 2020), and this variable was used to recalculate (by division) the indicators of tourism spending. In the final form, the variables on tourism spending were: USD per capita in real prices adjusted by Purchasing Power Parities for GDP per capita volume indices Current_PPPs.

The data were collected for 36 selected OECD countries, while Columbia was excluded due to its short OECD membership and its characteristics as a developed country may be questionable. Despite this fact, the primary exclusion criterion was its short membership.

Given the main objective, in which proving the significance of the effects of institutional innovations on selected tourism spending in developed countries plays a major role, regression analysis was chosen as the most appropriate analytical tool. The data themselves were formed by OECD countries (n = 36) and the years 2010–2019 (T = 10), suggesting a balanced panel. The panel regression analysis consisted of three models (one-way individual pooling model, one-way individual fixed (within) effect model, one-way individual random effect model: Swamy-Arora's transformation (Swamy & Arora, 1972)). A robust estimation was considered the most appropriate for analytical processing after evaluating the assumptions (the F test for the presence of individual effects (or time effect), the Hausman test for panel models, the Breusch-Pagan test, the Wooldridge test for unobserved individual effects (Wooldridge, 2010), the Baltagi and Li one-sided LM test (Baltagi & Li, 1995)). The pooling model was estimated using the heteroskedasticity-consistent covariance matrix estimation. The Arellano estimation method (Arellano, 1987) was applied for the fixed model, and the random model was estimated by the White 2 estimator. For completeness, it should be noted that these models always included only one independent variable. In addition to the above-mentioned procedures, it is possible to find a basic statistical description of variables in the following section. Also, outliers were identified by the Hampel test (Hawkins, 1980), which was selected with respect to the analysed data. These outliers were removed and subsequently imputed by the multiple imputation by chained equations (Azur et al., 2011). The programming language R (R Core Team 2020), v. 4.0.2 was used for analytical processing in R Studio – Rstudio, Inc., Boston, MA, U.S.

4. Results and Discussion

This section is focused on the analytical processing presented above, and it is divided into two consecutive parts. The first part offers a basic statistical description of variables. This part aims to create an idea of the inputs to subsequent analyses. Subsequently, in the second part, a regression analysis was used to evaluate the significance of the effects of institutional innovations on tourism spending. At the beginning of this part is an assessment of the assumptions of selected regression models, which are provided in the last part of the analytical processing.

Table 1 provides the results of the descriptive analysis of all variables entering the analyses. In total, the data included 360 observations (36 countries and 10 years). When focusing on the average values of indicators of institutional innovations, these values can be interpreted as relatively high. The highest value can be seen in the regulatory environment (Regulatory: Mean = 82.67; 95 % CI = 81.5–83.9; 5% TM = 83.30; Median = 84.1), and the other two indicators of institutional innovations lag behind minimally. When comparing the mean and 5% trimmed mean ™, it cannot be concluded that there were significant outliers, which is also supported by the comparison of the mean values and the median values in these indicators. The skewness and the kurtosis show minimal deviations from the normal distribution, while the largest deviations are evident in the business environment indicator (Business: Skew = -1.15; Kurt = 1.92). Looking at the standard deviations, the values of the

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indicators of institutional innovations differed from each other the least in the indicator of the business environment (Business: SD = 9.13) and the most in the indicator of the regulatory environment (Political: SD = 12.6). The sample consisted of developed countries and the minimum values appear to be surprising and non-standard (Min: Political = 37; Regulatory = 48.2; Business = 40), as higher values were expected due to the degree of development. The maximum values are close to the theoretical maximum (100), which can be considered positive. With a focus on the indicators of tourism spending, the LTS indicator acquired the highest value of central tendencies (Mean = 2099.25; 95 % CI = 1964.8–2233.7; 5% TM = 1384.76; Median = 1368.64). The DTS indicator showed the smallest deviations from the normal distribution (Skew = 0.63; Kurt = -0.35). The lowest values were measured in the BTS indicator (Mean = 522,47; 95 % CI = 486.3–558.7; 5% TM = 488.55; Median = 492.41), in which the second largest deviations from the normal distribution are also evident (Skew = 2.45; Kurt = 10.72). The largest deviations from the normal distribution were identified in the VEFS indicator (Skew = 3.34; Kurt = 15.72). Basic information on the average values of the given indicators in the individual analysed countries is presented in the Table 2. Based on this information, it is possible to assess specific countries.

Table 1. Descriptive analysis of variables before data imputation

Variable N = 360	Mean	95% CI	5% TM	Median	SD	Min	Max	Skew	Kurt
Political	79.28	78.0–80.6	80.18	80.35	12.6	37	99.5	-0.99	0.77
Regulatory	82.67	81.5–83.9	83.3	84.1	11.53	48.2	99.7	-0.59	-0.33
Business	80.68	79.7–81.6	81.34	82.15	9.13	40	97.8	-1.15	1.92
BTS	522.47	486.3–558.7	488.55	492.41	349.25	112.99	2599.15	2.45	10.72
LTS	2099.25	1964.8–2233.7	1964.41	1824.11	1297.32	454.76	8863.93	2.14	7.14
DTS	1430.18	1342.1–1518.3	1384.76	1368.64	849.94	197.53	3851.9	0.63	-0.35
VEFS	1191.53	1075.68–1307.39	1047.80	838.12	1117.75	66.97	8322.97	3.34	15.72

Note: Mean – arithmetic mean; 95 % CI – 95 % confidence interval for mean; 5 % TM – trimmed mean; SD – standard deviation, Min – minimum; Max – maximum; Skew – skewness; Kurt – kurtosis

Table 2. Mean values of indicators in individual countries for the analysed period (2010–2019)

Country	Political	Regulatory	Business	BTS	LTS	DTS	VEFS
Australia	86.43	**93.57**	**87.29**	547.34	**2651.46**	**2550.98**	647.82
Austria	**88.41**	**94.17**	77.28	579.98	**3503.43**	**2098.14**	**1985.27**
Belgium	82.21	83.70	85.12	429.60	1208.42	752.54	885.48
Canada	**90.30**	**94.54**	**92.26**	**662.11**	1110.19	1382.25	390.05
Chile	74.37	75.06	72.56	268.64	1444.86	1393.81	319.69
Czech Republic	79.41	76.66	74.10	274.56	1178.54	600.24	852.86
Denmark	**91.39**	**96.02**	**90.33**	**949.99**	1504.86	1381.31	1073.55
Estonia	78.50	85.45	77.31	**667.23**	2123.44	718.95	**2071.71**
Finland	**95.03**	**95.17**	**90.26**	**787.44**	2050.94	**2082.33**	756.05
France	78.48	85.02	79.21	494.49	2049.79	1703.98	840.30
Germany	86.30	81.94	81.68	**616.66**	**2944.88**	**3067.31**	494.24
Greece	59.33	69.39	70.46	231.90	**3356.29**	1405.75	**2182.45**
Hungary	70.37	77.06	70.38	136.50	1220.84	391.91	965.42
Iceland	85.37	87.88	85.44	**1833.72**	**7018.31**	**2941.74**	**5910.28**
Ireland	84.92	90.80	**90.11**	610.72	1354.30	445.54	**1519.49**
Israel	62.16	70.44	78.35	330.36	1637.96	951.53	1016.79
Italy	65.96	78.64	74.88	610.95	2487.39	**2358.97**	739.37
Japan	86.57	89.58	81.97	598.45	1228.51	1616.64	210.31
Korea	72.95	68.82	**87.93**	180.41	721.94	491.10	411.25
Latvia	72.37	80.77	77.29	273.65	1359.09	689.50	943.24
Lithuania	76.28	72.57	72.98	251.93	900.14	489.91	662.17
Luxembourg	**92.26**	82.92	73.31	186.15	**3725.33**	697.66	**3213.83**

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Mexico	47.86	57.60	76.15	156.94	2553.49	**2390.34**	320.09
Netherlands	**90.58**	**93.07**	**87.53**	435.95	1254.94	880.26	810.64
New Zealand	**93.61**	**98.17**	**88.08**	**1065.99**	**4683.47**	**3556.52**	**2192.94**
Norway	**93.13**	**94.67**	**89.78**	583.46	1817.94	1689.36	712.04
Poland	74.52	74.54	73.10	179.68	484.20	213.45	450.43
Portugal	79.15	72.79	83.67	533.56	**2890.42**	1205.31	**2218.67**
Slovak Republic	76.49	73.02	74.01	367.06	887.14	636.98	617.23
Slovenia	75.05	79.99	83.10	394.69	2235.95	907.75	**1722.89**
Spain	71.44	76.82	76.61	372.28	**2798.03**	1414.81	**1755.51**
Sweden	**91.48**	91.30	84.43	**906.23**	1888.79	1730.99	1064.03
Switzerland	**94.79**	**94.84**	77.64	517.46	**2884.63**	1938.44	1463.64
Turkey	45.71	54.57	64.05	138.51	853.28	451.38	540.41
United Kingdom	80.15	**94.62**	**88.56**	**909.18**	1905.99	**2319.83**	495.34
United States	80.61	89.85	87.24	**725.06**	1653.84	**1939.12**	439.78

Note: The ten highest values in each category are highlighted in 'bold' and the ten lowest values are highlighted in 'underline'.

Based on the descriptive analysis, some discrepancies in the data could be expected. For further analytical processes, it was therefore appropriate to eliminate these discrepancies. These were mainly deviations in the form of increased kurtosis and skewness. The application of the Hampel test revealed the presence of outliers (N: Political = 4; Regulatory = 0; Business = 5; BTS = 7; LTS = 14; DTS = 0; VEFS = 26). The identified outliers were removed and subsequently imputed using the multivariate imputation by chained equations technique.

Table 3. Descriptive analysis of variables after data imputation

Variable	Mean	95% CI	5% TM	Median	SD	Min	Max	Skew	Kurt
Political	79.33	78.05–80.62	80.18	80.35	12.43	43.5	99.5	-0.92	0.52
Regulatory	82.67	81.47–83.86	83.3	84.1	11.53	48.2	99.7	-0.59	-0.33
Business	81.12	80.27–81.97	81.55	82.25	8.19	56.8	97.8	-0.68	-0.06
BTS	498.58	471.03–526.13	485.66	489.01	265.81	112.99	1294.95	0.56	-0.37
LTS	2005.42	1901.5–2109.34	1952.37	1824.11	1002.65	454.76	5780.35	0.78	0.06
DTS	1430.18	1342.09–1518.28	1384.76	1368.64	849.94	197.53	3851.9	0.63	-0.35
VEFS	1044.84	977.72–1111.96	1017.26	835.11	647.61	66.97	2468.1	0.74	-0.69

Note: Mean – arithmetic mean; 95 % CI – 95 % confidence interval for mean; 5 % TM – trimmed mean; SD – standard deviation, Min – minimum; Max – maximum; Skew – skewness; Kurt – kurtosis

Table 3 shows the results of descriptive analysis performed on the analysed data after the adjustment (removal of outliers and subsequent imputation of the data). It is possible to observe an increase in central tendencies in the indicators of institutional innovation and, conversely, a decrease in indicators of tourism spending. In the case of adjusted data, the position of skewness and kurtosis is acceptable.

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Table 4. Assumptions of panel regression models

Model	F Test (effect) countries	F Test (effect) years	Hausman test (fixed–random)	Wooldridge test (unobserved effects)	Baltagi-Li one-sided LM test	Breusch-Pagan test
Political–>BTS	96.01†	1.17	46.61†	3.56†	10.1†	18.86†
Political–>LTS	133.78†	0.61	0.58	4.01†	5.98†	1.85
Political–>DTS	473.04†	0.35	8.05***	3.82†	14.29†	0.12
Political–>VEFS	115.26†	0.8	0.3	4.19†	9.26†	1.83
Regulatory–>BTS	69.16†	1.46	187.14†	3.73†	10.03†	14.21†
Regulatory–>LTS	130.88†	0.57	1.95	4.02†	5.12†	0.44
Regulatory–>DTS	413.65†	0.41	79.53†	3.53†	14.56†	0.28
Regulatory–>VEFS	115.33†	0.71	0.88	4.11†	8.30†	1.35
Business–>BTS	101.67†	1.44	12.67†	3.57†	9.64†	6.4**
Business–>LTS	143.66†	0.41	0.02	3.83†	4.01†	0.1
Business–>DTS	462.95†	0.28	4.33**	3.76†	14.03†	3.68*
Business–>VEFS	121.43†	0.68	0.38	4.18†	7.65†	0.86

Note: * p-value < 0.1; ** p-value < 0.05; *** p-value < 0.01; † p-value < 0.001

Table 4 shows the results of testing the assumptions that affect the preference of the regression model (Table 5). The first and second columns provide the results of the F Test for individual and/or time effects. The first column assesses the individual effects of the panel variable characterizing each country. This test compared the pooling (Ordinary Least Square – OLS) model and the fixed (effect) panel model. Obviously, the output appears to be significant in all of the analysed cases, which means that the individual effect of each country was significant. The F test verifying the effect of years shows insignificant results in all cases. Based on the above-mentioned, it is clear that the panel model with the panel variable country was more suitable than the pooling model. The third column shows the output of correlated effects analysis.

For this purpose, the Hausman test was chosen, which evaluated the effects as significantly correlated in half of the analysed cases (Political–>BTS: 46.61†; Political–>DTS: 8.05***; Regulatory–>BTS: 187.14†; Regulatory–>DTS: 79.53†; Business–>BTS: 12.67†; Business–>DTS: 4.33**). In these cases, the fixed (effect) model appeared to be more appropriate than the random (effect) model.

The serial correlation was assessed by the Wooldridge test for unobserved individual effects and the Baltagi-Li one-sided LM test, and it is clear that there was a significant correlation in all of the analysed cases. This result can be considered as negative and a robust estimation approach seems to be appropriate for the solution of this shortcoming. In the last column, the constancy of the variability of residues is assessed. This assumption was not met in four cases (Political–>BTS: 18.86†; Regulatory–>BTS: 14.21†; Business–>BTS: 6.4**; Business–>DTS: 3.68*), as the presence of heteroscedasticity is evident in these cases. Based on these deviations, a robust approach to estimates was chosen.

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Table 5. Regression analysis results

Model	Coef	Pooling (SE)[a]	Fixed (SE)[b]	Random (SE)[c]
Political–>BTS	β	12.65†(8.41:16.89)	-1.21(-4.09:1.68)	1.03(-3.44:5.51)
	α	-497.33***(-807.10:-187.56)		424.55**(68.42:780.67)
Political–>LTS	β	13.64(-11.50:38.78)	-0.95(-15.51:13.61)	0.85(-14.38:16.09)
	α	876.92(-1,124.36:2,878.20)		1,891.59***(650.10:3,133.09)
Political–>DTS	β	17.56(-5.390:40.41)	-5.28*(-10.74:0.19)	-4.74***(-8.30:-1.18)
	α	37.33(-1,800.51:1,875.18)		1,806.16†(1,417.47:2,194.86)
Political–>VEFS	β	8.2(-6.32:22.72)	-0.25(-13.61:13.11)	0.97(-10.38:12.33)
	α	363.36(-785.20:1,511.92)		936.83**(21.22:1,852.45)
Regulatory–>BTS	β	16.65†(12.64:20.66)	0.32(-2.33:2.98)	3.31†(1.39:5.24)
	α	-869.87†(-1,179.11:-560.62)		232.43***(75.01:389.85)
Regulatory–>LTS	β	17.76(-7.80:43.32)	-1.54(-13.23:10.15)	0.52(-6.44:7.48)
	α	491.43(-1,642.46:2,625.32)		1,916.40†(1,274.57:2,558.22)
Regulatory–>DTS	β	29.30**(5.91:52.69)	-0.81(-5.11:3.50)	-0.13(-3.54:3.28)
	α	-991.8(-2,953.08:969.48)		1,440.61†(1,067.52:1,813.71)
Regulatory–>VEFS	β	7.28(-7.69:22.24)	-1.57(-9.56:6.41)	-0.49(-5.20:4.21)
	α	412.47(-826.92:1,651.86)		1,054.76†(631.09:1,478.43)
Business–>BTS	β	18.15†(11.93:24.37)	1.74**(0.13:3.34)	2.54†(1.40:3.68)
	α	-966.28†(-1,440.20:-492.35)		300.30†(193.30:407.29)
Business–>LTS	β	2.61(-27.37:32.59)	9.52***(3.67:15.37)	9.31†(4.88:13.73)
	α	1,747.50(-748.30:4,243.30)		1,204.24†(743.50:1,664.98)
Business–>DTS	β	28.73**(5.53:51.93)	3.75(-0.85:8.35)	3.91***(1.51:6.30)
	α	-900.88(-2,738.58:936.82)		1,113.27†(786.59:1,439.96)
Business–>VEFS	β	-3.94(-22.37:14.49)	5.66***(1.89:9.44)	5.30†(2.26:8.34)
	α	1,333.74*(-209.78:2,877.27)		584.00†(276.28:891.71)

Note: a – Robust estimation; b – Arellano estimator; c – White 2 estimator
* p-value < 0.1; ** p-value < 0.05; *** p-value < 0.01; † p-value < 0.001

Table 5 provides the results of the regression analysis. In the analysed case of Political–>BTS, it is possible to confirm the significance only when using the pooling model (β = 12.65†), neither the fixed model nor the random model showed significant coefficients for this case. Given the assumptions in Table 4, the fixed and random models in Table 5 are more relevant compared to the pooling model. On this basis, the effect of the political environment on business tourism spending (Political–>BTS) cannot be considered significant. A similar result can be observed for Regulatory–>DTS (β: Pooling = 29.30**; Fixed = -0.81; Random = -0.13). With a focus on the analysed cases of Political–>LTS, Political–>VEFS, Regulatory–>LTS, and Regulatory–>VEFS, there was no significant coefficient in any model. For Regulatory–>BTS, a significance can be confirmed for both the pooling model (β = 16.65†) and the random model (β = 3.31†), while the fixed model (β = 0.32) appears to be the most appropriate based on the assumptions (Table 4). On the other hand, there was no significance in this model. Again, a similar result can be observed in the case of Business–>DTS. The most valuable results can be found in Business–>BTS (β: Pooling = 18.15†; Fixed = 1.74**; Random = 2.54†), Business–>LTS (β: Pooling = 2.61; Fixed = 9.52***; Random = 9.31†), and Business–>VEFS (β: Pooling = -3.94; Fixed = 5.66***; Random = 5.30†). In these cases, it is recommended to prefer the use of the fixed model (Business–>BTS) and the random model (Business–>LTS, Business–>VEFS) instead of the pooling model. All significant effects showed positive β coefficients with the exception of Political–>DTS (in which the significance was only at the level of α = 0.1 when using the most appropriate fixed model).

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Discussion

Tourism is constantly adapting to changing institutional conditions, which are reflected in the political, regulatory and business environment. At the same time, the tourism sector is an important part of the economies, as evidenced by the fact that this sector contributed to the global economy GDP by 10,3% in 2019 (WTTC, 2020b). For this reason, the role of institutional innovations in tourism should be addressed.

In general, it is well known that institutions are important for the national level of innovation in developed countries (Bunda et al., 2014). According to Kim et al. (2018), countries that are able to achieve higher quality of governance institutions are more attractive to international tourists, which can be reflected in higher revenues from them. In this sense, institutional innovations in the political, regulatory and business environment are considered important in tourism. From a political point of view, many authors agree that greater stability in countries generally leads to higher tourism development (Bayar & Yener, 2019; Lee & Chen, 2020; Liu & Pratt, 2017); therefore, political instability, conflicts, security, and terrorism should not be overlooked (Causevic & Lynch, 2013; Ghaderi et al., 2017; Liu & Pratt, 2017; Saha & Yap, 2014; Saha et al., 2017). From another perspective, Kim et al. (2018) highlighted regulatory quality and the rule of law as the characteristics of governance with a greater effect on international flows in tourism, and these authors revealed that the effect of improving institutional quality on tourism is stronger in high-income countries than in emerging economies. In addition to the mentioned, Gani and Clemes (2020) confirmed that business infrastructure is associated with foreign business visitors, while the authors emphasized that open trade policies, together with improving the business environment, play an important role in this area. Dragicevic et al. (2012) also pointed to investments and improvements in the planning and development of tourism products as a potential source of a competitive business tourism destination. Simultaneously, destination competitiveness is associated with the number of tourism visitors and tourism spending (Dwyer et al., 2003; Tsai et al., 2009). Based on all these findings, it can be noted that innovations in the political, regulatory and business environment are very welcome, but these findings do not clarify the effect of institutional innovations in tourism.

The presented study fills this research gap in terms of tourism spending. In general, this study provides evidence of the significant effects of institutional innovations on tourism spending. From a specific point of view, the most significant effects were observed in the case of institutional innovations in the business environment. In this context, significant and positive effects on business tourism spending, leisure tourism spending and visitor exports (foreign spending) were confirmed. This fact means that, with an increase in the rating of institutional innovations in the business environment, an increase in the mentioned spending can be expected, which is positive for the analysed economies. In the case of institutional innovations in the political and regulatory environment, no significant and positive effects were demonstrated. Despite this fact, our findings confirm that institutional quality and innovations remain a key aspect in developed countries and their specific sectors, as generally emphasized by Egan (2013), who analysed this issue in developing countries, or by Liedong et al. (2020), who examined emerging markets. Our results can build on the findings of Vietze (2011), who emphasized the importance of 'good' institutions in a country in terms of international tourism spending. The author has clearly confirmed that a high level of civil rights, political stability, effective governance, low corruption and a high level of freedom are important factors in this issue. In terms of the presented research, institutional innovations can have a positive effect on the tourism sector as a driver of economic performance.

The findings also indicate that leisure tourism spending was the category with the highest spending and business tourism spending was the category with lowest spending. Nevertheless, Moll-de-Alba et al. (2016) revealed that the daily spending of business tourists is significantly higher compared to leisure tourists. These authors also found a shorter length of stay for business tourists, which may be reflected in their overall contribution to tourism spending. At the same time, it should be noted that business tourism is a less represented area in this sector (Ibanescu et al., 2018). With a focus on the individual analysed countries, Iceland and New Zealand dominated

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among other countries in terms of tourism spending. Countries such as Canada, Denmark, Finland, the Netherlands, New Zealand and Norway can be considered positive in terms of institutional innovations. The efforts devoted to institutional innovations in the business environment are considered very effective in countries such as Turkey, Hungary, Chile, Lithuania, Poland and the Slovak Republic. According to the ideas of β convergence, these are countries with a lower level of development in the business environment; therefore, it is very likely that positive changes will also have a positive effect on tourism spending.

Conclusion

The doubts about the importance of the research efforts on tourism spending can be easily dispelled. Given the economic power contained in national economy metrics, initiatives describing the relations with tourism spending are at least beneficial. The objective of the presented study was to evaluate the significance of the effects of institutional innovations (represented by innovations in the political, regulatory and business environment) on tourism spending (represented by business tourism spending, leisure tourism spending, domestic tourism spending and visitor exports).

Panel models were used to estimate the effects, as it was shown that the effects of countries could not be ignored. In future similar research projects, it is recommended to prefer the use of country-based models over the simple estimation techniques (which have been shown to lead to distorted and often diametrically different conclusions).

One of the most important findings of the study is that institutional innovations in the business environment have a positive effect on tourism spending. The effect was found in terms of business tourism spending, leisure tourism spending and visitor exports (foreign spending). On this basis, it can be concluded that innovations in the business environment can lead to an increase in tourism spending in these categories. In the political and regulatory environments, it is not possible to talk about demonstrable effects in general.

These findings underline the fact that the attention of policy makers and strategic plan makers should be focused on institutional innovations in the business environment, in particular in the areas of the ease of starting a business and the ease of resolving insolvency. Improvements in these areas can lead to the support and revitalization of the tourism sector in terms of tourism spending. Tourism spending is reflected in the revenues of tourism businesses, which mean a significant contribution to the national economy. Strategic planners should know what affects tourism spending at both the political and practical levels, and institutional innovations play an important role. This issue is even more important at a time when tourism is hard hit by the COVID-19 pandemic, while the tourism sector is considered to be one of the main drivers of the economy. For this reason, it is recommended to remove institutional barriers for tourism businesses and to make progress at the institutional level. The presented study also emphasizes the need for research into institutional innovations in various sectors of the national economy in developed countries, as this issue is not sufficiently examined and it could offer valuable information to policy makers seeking to achieve the required economic performance.

One of the dominant limitations can be identified in the data of institutional innovations themselves. These are represented by a sub-index of GII and they consist of several indicators collected from third-party databases, usually collected with a certain time lag. However, in general, the GII is considered to be a relevant source of information; therefore, the limitation in question is not expected to affect the results significantly. A potential source of limitations is that the results can be generalized only to developed countries, it can be assumed that the results may be different in countries with a lower degree of development. Further research ambitions in this area will be focused on the examination of relations in the context of other types of innovations. It would also be quite interesting to compare countries with a lower level of development.

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