JOURNAL OF TOURISM AND SERVICES
Issue 26, volume 14, ISSN 1804-5650 (Online)
www.jots.cz

Do Travel and Tourism Competitiveness determine International Tourism Inbound Receipts? A Quantile Regression Model for 125 Countries

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Received: 15 December 2022. **Revision received**: 9 January 2023. **Accepted**: 23 February 2023

Abstract
Tourism is one of the sectors of the economy most affected by the situation caused by the spread of COVID-19. For the re-growth of international tourism competitiveness, it is important to know the main determinants affecting tourism performance, specifically international tourism inbound receipts (*ITIR*). This paper aims to find out whether a country's *ITIR* is determined by travel and tourism gross domestic product (GDP) and travel and tourism competitiveness measured by the Travel and Tourism Competitiveness Index (*TTCI*). The data was obtained from the Travel and Tourism Competitiveness Report from 2019. The proposed new model for 125 countries is specific because we consider conditional quantiles of the dependent variable. The results of a quantile regression determined that individual percentiles of the *ITIR* are more affected by travel and tourism GDP and *TTCI* than other percentiles of the *ITIR*, which was then reflected in the changes of regression coefficients. Considering the findings of this paper, it is possible to implement a competitive destination policy not only for the specific geographical cluster, as in the existing literature, but also for groups of countries created according to the affiliation to selected quantiles. This study significantly contributes to the theory and empirical evidence of the influence of tourism competitiveness when modeling tourism performance. Moreover, even though existing studies encourage quantile regression usage in tourism research, this paper appears to be original in determining the variables entering the analysis (*ITIR*, *TTCI*, travel, and tourism GDP).

Key Words: competitiveness, tourism, GDP, quantile regression, model, receipts

JEL Classification: L83, Z33, Z31

Reference: Vašaničová, P., Jenčová, S., Kiseľáková, D. & Nebeský, Ľ. (2023). Do Travel and Tourism Competitiveness determine International Tourism Inbound Receipts? A Quantile Regression Model for 125 Countries. *Journal of Tourism and Services*, 26(14), 137-152. doi: 10.29036/jots.v14i26.482

1. Introduction

Defining and measuring destination competitiveness indicators makes it possible in international tourism research to set aside attributes to create a ranking of competitive destinations. It creates opportunities to discuss the suitability of current definitions of tourism competitiveness, but

also the suitability and adequacy of qualification, measurement, and assessment of the tourism competitiveness as a sector or competitiveness of individual destinations. Unfortunately, the evaluation of destinations should be based not only on their competitive advantages but also on real tourism performance (Assaf & Josaissen, 2012; Stefko et al., 2020), which can be measured by several indicators, e.g., tourist arrivals, tourism inbound receipts, travel, and tourism industry GDP, average receipts per arrival. However, there are still not enough large-scale studies to address the impact of tourism competitiveness on tourism performance.

We can assign different importance to tourism performance indicators. According to Joshi et al. (2017), in terms of the country's economic growth and development, international tourism inbound receipts (*ITIR*) may be more important than international tourist arrivals. The reason is that revenues from international tourism capture the tourist arrivals (number of visitors), but also the length of their stay and their economic benefits for the country as a destination. It is relevant for countries where international tourism is an engine of economic growth or a means of regional development.

The public tourism policy formulation can be directly based on the identification of the attributes that have the most significant impact on tourism performance. Hanafiah & Zulkifly (2019) state, when a destination can accumulate revenue from visitors, then it is competitive with other destinations. On the other hand, we may ask whether a more competitive destination will generate higher revenues. Therefore, this paper aims to find out whether a country's *ITIR* are determined by travel and tourism GDP and travel and tourism competitiveness measured by the *TTCI*.

The originality of this research lies in the empirical evidence of the influence of tourism competitiveness and travel and tourism GDP on *ITIR*. The new model for 125 countries shows the statistical significance of a destination's competitiveness as a source of tourism performance (measured by *ITIR*). The use of a quantile regression when modelling tourism performance also contributes to the originality of the research. The study results can contribute to developing effective international tourism policies in particular countries or groups of countries.

The remainder of the paper is structured as follows. Section 2 presents the theoretical background of this research. Section 3 describes the methodology, data, and the new model. Section 4 and 5 discuss results. Section 6 concludes findings, managerial implications, and limitations of this research.

2. Literature review

Openness to international competition allows the state to increase local productivity, expand the most productive local industries, gain access to more advanced knowledge and technology from abroad, and expose local businesses to higher levels of competitive pressure (Delgado et al., 2016). At a country level, the goal of competitiveness is to maintain and increase citizens' real incomes, which is usually reflected in the country's standard of living.

The country's comparative advantage in the tourism sector is a potential advantage. Fully exploited comparative advantages represent competitive advantages. If countries specialize in their competitive advantages, they increase their competitiveness and profits (Algieri et al., 2018). The comparative advantage of tourist destination greatly influences tourists when choosing destinations (Barbe et al., 2016).

In general, we can define the tourist destination competitiveness in relation to the other destination as its increasing capacity to attract visitors in order to increase visitors' expenses and provide them with a satisfactory experience (Gavurova et al. 2023). The quality of the destination also plays a decisive role in obtaining tourism outputs, e.g., the number of arrivals or income from tourism (tourism inbound receipts) (Assaf & Tsionas, 2015). According to Dupeyras & MacCallum (2013), the country's tourism competitiveness represents the ability of tourist destinations and attractions to optimize their attractiveness for residents and non-residents by providing attractive, quality, and

innovative services for visitors, gaining market shares in domestic and foreign markets, and ensuring that available resources supporting tourism are used efficiently and sustainably.

According to Sánchez & López (2015), competitive advantages increase the destination's ability to use resources efficiently in the long run. It means that destination with more resources than others have more comparative advantages. Tourist destinations with fewer resources can gain a competitive advantage through effective management.

Destination competitiveness necessarily links to destination performance. Destination performance can be quantified using several indicators, e.g., tourist arrivals, number of nights spent, tourism inbound receipts, average receipts per arrival (Maráková et al., 2016; Hanafiah & Zulkifly, 2019), travel and tourism industry GDP, and travel and tourism industry employment (Blanke & Chiesa, 2007; Calderwood & Soshkin, 2019).

International tourism receipts were used as variable in designed models of tourism development, tourism performance, or economic growth in Göral (2016), Wu & Wu (2018), Lin et al. (2020), Radovanov et al. (2020), Wu et al. (2022). One of the goals of the tourism industry is to maximize revenue (tourism inbound receipts). Strengthening the growth of the sector and the general macroeconomic situation but also increasing the quality of services and goods offered can help achieve this goal (Hanafiah & Zulkifly, 2019). Competitive advantages give the country better opportunities to sell tourism services on international markets and allow them to offer services at a lower price compared to competitors (Algieri et al., 2018). Therefore, in this paper, tourism competitiveness is considered a variable that affects tourism performance.

Many tourism indicators, e.g., *ITIR* or travel and tourism GDP, are objectively measured and published through various world databases. However, measuring the tourism competitiveness is specific, demanding and often subjective. Understanding the main determinants of tourism competitiveness from a global perspective has a crucial impact on creating a country's brand in order to maintain its growth and vitality (Skare et al. 2023a; Hassan & Mahrous 2019) because tourism competitiveness is an indicator of changes in the tourism market (de Paula Aguiar-Barbosa et al., 2021). This allows advanced and developing economies to gain a more comprehensive view of tourism performance resources, which would help policymakers to design better strategies to improve these resources and consequently increase the tourism performance (Algieri et al., 2018; Reisinger et al., 2019 and see also Stefko et al., 2014; Štefko et al., 2019; Rajnoha et al., 2019).

The analysis of the tourism competitiveness determinants leads to the compilation of world rankings, which indicate the country's position in the overall and partial ranking. The tourism competitiveness determinants and perspectives of many studies and models are different, e.g., satisfaction, productivity, and quality of life (Skare et al. 2023b; Croes & Kubickova, 2013); tourism infrastructure and related infrastructure, economic conditions, safety and health, tourism price competitiveness, government policies, environmental sustainability (Prokopenko et al., 2020), work abilities and training, natural and cultural resources (Assaf & Josiassen, 2012). Theoretical knowledge application in practice is of great importance, especially in terms of competitive advantages (Stefko et al., 2017). An international comparison of the main components of tourism competitiveness can provide valuable information associated with the accumulation of investment in potential objectives suitable for tourism development and promotion. Pulido-Fernández & Rodríguez-Díaz (2016) state tourism competitiveness is a relative variable because a country may or may not be considered competitive with other countries. Therefore, the fact that a country shows higher values than all other countries in all indicators measuring competitiveness will mean that this country is more competitive. On the other hand, this does not necessarily mean that the country is doing well in the international tourism market. It just means the country is doing better than others.

Due to the economic comparison of tourism competitiveness among countries, the Travel and Tourism Competitiveness Report has been published by the World Economic Forum since 2007 (Blanke & Chiesa, 2007). Based on the statistical database and expert evaluations, the position of

countries in terms of tourism competitiveness is expressed in the form of the Travel and Tourism Competitiveness Index (*TTCI*). Since 2015, the *TTCI* consists of four sub-indexes, i.e., Enabling Environment, Travel and Tourism Policy and Enabling Conditions, Infrastructure, Natural and Cultural Resource. The data of *TTCI* was used in several studies. Ferreira & Castro (2020) studied 46 European countries and used factor analysis and cluster analysis to determine similar patterns in tourism competitiveness. Kunst & Ivandić (2021) used indicators of *TTCI* to evaluate tourism competitiveness and tourism performance of Mediterranean countries.

Existing studies also dealt with specific pillars of indicators of *TTCI*. Dias (2017) addressed the environmental sustainability pillar in detail. Khan et al. (2017) dealt with indicators of air transportation, railways transportation, travel and transport services. Radovanov et al. (2020) used in their data enveloped analysis model several indicators of *TTCI* (e.g., number of World Heritage cultural sites, number of World Heritage natural sites). Joshi et al. (2017) found that pillars of *TTCI* are strong predictors of tourism receipts. Bazargani & Kiliç (2021) identified infrastructure, policy conditions, enabling environment, and natural and cultural resources as drivers of tourism performance.

Other studies used indicators of *TTCI* to develop a new methodology for measuring tourism competitiveness. Perez Leon et al. (2021) propose an index for measuring tourism destination competitiveness in the Caribbean Region. Assaf & Tsionas (2015) developed a more robust method while they used quality indicators of *TTCI*. Pulido-Fernández & Rodríguez-Díaz (2016), Martín et al. (2017), and Fernández et al. (2020) designed new alternative methodology to calculate *TTCI*. Ivanov & Ivanova (2016) identified new determinants of tourism competitiveness and compared them with *TTCI*. In this paper, *TTCI* is used as one of independent variable when examining changes of *ITIR* among 125 countries.

In addition to using *TTCI* as an indicator influencing tourism performance, the research gap is complemented by *TTCI* use in the quantile regression model. In 2018, Assaf & Tsionas (2018) encourage more use of quantile regressions in tourism research. However, we are not aware that the *TTCI* indicator is used in the quantile regression model. Quantile regression has been used in several studies on tourism issues. Shahzad et al. (2017) examined the effect of the quantiles of tourism growth on the quantiles of economic growth of a country. Tourism-economic growth relationship was confirmed also by Lolos et al. (2021). A similar study realized by Sahni et al. (2021) found the relationship between tourism receipts and economic growth. Arain et al. (2020) investigated the relationship between inbound tourism and foreign direct investment. The foreign direct investments is very important for business development, including the tourism sector (Lacko et al., 2023). Jena & Dash (2020) investigated the impact of exchange rate change and volatility on tourist arrivals. Sharma et al. (2020) assessed impact of socioeconomic, demographic and satisfaction-based variables on inbound tourist expenditures. Marrocu et al. (2015), Moreno-Izquierdo et al. (2020), and Pérez-Rodríguez & Ledesma-Rodriguez (2021) studied the determinants of tourist demand from a micro-level perspective. Chen (2016) investigated how the growth rate of total foreign tourist arrivals affects the growth rate of sales and financial performance of hotel firms in Taiwan. Lee et al. (2021) provided impressive study that examined impacts of information and communication technologies on tourism development. As none of these studies considers tourism competitiveness as an indicator influenced tourism performance, this paper appears to be original.

3. Methods

This paper aims to find out whether a country's *ITIR* are determined by travel and tourism GDP and travel and tourism competitiveness measured by the *TTCI*. Based on this aim, the results obtained from empirical studies and the motivation for our research, we formulate a following research hypothesis:

Hypothesis: *ITIR* are positively influenced by travel and tourism GDP and travel and tourism competitiveness.

We want to identify significant statistical and common economic links to the international travel and tourism competitiveness and attractiveness. To implement destination policy for groups of countries created according to the affiliation to selected quantiles, we verify the established hypothesis using quantile regression (QR) and compare the results with the commonly used multiple linear regression (ordinary least squares method – OLS). The dependent variable is international tourism inbound receipts (*ITIR*) (in million USD), the independent variables are travel and tourism GDP (in million USD), and the *TTCI* (described in theoretical background of this paper). We obtained data from the Travel and Tourism Competitiveness Report from 2019 (Calderwood & Soshkin, 2019) and variable names are left in their original form. The research sample consists of 125 countries that are listed in Table 3 in the section 4. Specifically, we consider 20 Americas countries, 20 from Asia-Pacific area, 44 located in Europe and Eurasia, 15 countries from Middle East and North Africa and 26 from Sub-Saharan Africa.

The classical linear regression model estimates how, on average, individual independent variables affect a dependent variable. The regression coefficients obtained by QR estimate the change in each quantile of the dependent variable, which is caused by a unit change of the independent variable.

The basic concept of the QR methodology can be described according to Kalina & Vidnerová (2019, p. 25). In the standard linear regression model

$$Y_i = \beta_0 + \beta_1 X_{i1} + \ldots + \beta_p X_{ip} + \varepsilon_i, \quad i = 1, \ldots, n, \tag{1}$$

the regression τ-quantile for $\tau \in (0,1)$ is defined as a (regression) line with parameters obtained as

$$\arg\min_{b \in \mathbb{R}^p} \sum_{i=1}^{n} \rho_\tau \left(Y_i - X_i^T b \right), \tag{2}$$

where $X_i = \left(X_{i1}, \ldots, X_{ip} \right)^T$ denotes the i-th observation and ρ_τ (defined in Koenker (2005) as loss function) is considered in the form

$$\rho_\tau (x) = x \left(\tau - 1[x < 0] \right), \quad x \in \mathbb{R}, \tag{3}$$

with indicator function denoted by 1. Alternatively, ρ_τ may be formulated as

$$\rho_\tau (x) = \begin{cases} \tau x & \text{if } x \geq 0, \\ (\tau - 1) x & \text{if } x < 0. \end{cases} \tag{4}$$

If we assume that the quantile τ of the conditional distribution of the dependent variable Y_i is a linear function of the vector of independent variables (X_i), then we can write the quantile conditional regression as (Waldmann, 2018):

$$Y_i = \beta_0 + \boldsymbol{\beta}_\tau \mathbf{X}_{i\cdot} + \varepsilon_{i\tau}, \quad i = 1, \ldots, n, \tag{5}$$

A specific feature of QR is that the estimated coefficients of the independent variables, $\boldsymbol{\beta}_\tau$, can be significantly different in various quantiles, which may indicate a heterogeneous conditional distribution of the dependent variable (Waldmann, 2018). The advantage of QR is that it is the most suitable tool for modeling heteroscedastic data (Kalina & Vidnerová, 2019, p. 25; Koenker, 2005).
To meet the aim of this paper, the new model for the OLS is:

$$\ln ITIR_i = \beta_0 + \beta_1 \ln T \,\&\, TGDP_i + \beta_2 TTCI_i + \varepsilon_i, \quad i = 1, \ldots, n. \tag{6}$$

For QR, we consider the model according to (5) and the sequence of estimated coefficients is from $\tau = 0.05$ to $\tau = 0.95$ by 0.05. Given the inherent variability between countries in terms of *ITIR*, travel and tourism GDP a logarithmic transformation of these variables was needed to avoid undesirable heteroscedasticity in OLS. We test the presence of heteroscedasticity by Breusch-Pagan (*BP*) test (p-value higher than 0.05 confirm homogeneity of residuals). If the residuals are

heteroscedastic in the regression model, we use a paired bootstrap to compute *p*-values (for parameters of the model). To detect multicollinearity, we use variance inflation factor (*VIF* should be smaller than 10). To estimate the regression parameters of the QR model, we use the RStudio and the quantreg package, which was created according to Koenker (2005) and Koenker et al. (2017). To test whether the slope coefficients of the models are identical, we use ANOVA and the anova.rq package.

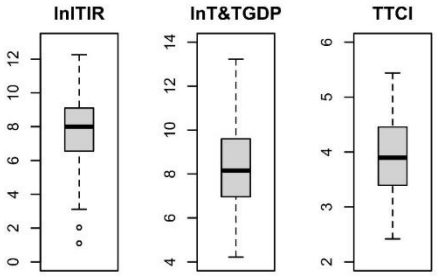
The descriptive characteristics of used variables are in Table 1. Figure 1 visualizes the variables through their quartiles in boxplots. Table 3 presents the descending order of countries according to the value of ln*ITIR*. The USA had the highest *ITIR* and travel and tourism GDP. On the contrary, Burundi had the lowest. Considering first boxplot in Figure 1, the second outlier belongs to Tajikistan. Spain was the most competitive country in the tourism market. On the other hand, Yemen had the lowest value of *TTCI*.

Table 1. **Descriptive Characteristics of Used Variables**

Descriptive characteristics	**ln*ITIR***	**ln*T&TGDP***	***TTCI***
Minimum	1.101	4.216	2.418
Median	8.010	8.152	3.897
Mean	7.765	8.265	3.920
Maximum	12.258	13.226	5.440
Standard deviation	2.016	1.851	0.699

Source: own calculations

Figure 1. **Boxplots of used variables**



Source: own processing using R

4. Results

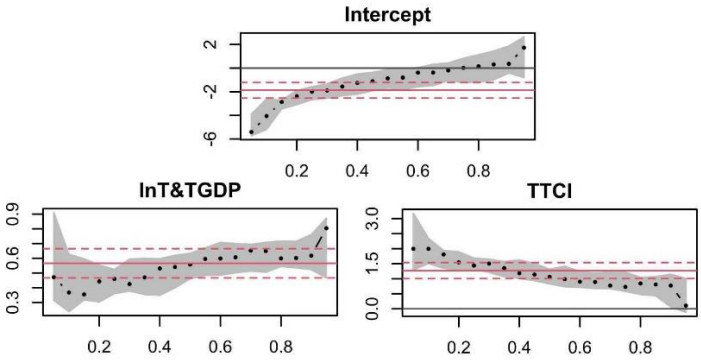
In Table 2, we present the estimates of QR and OLS models. Moreover, we present the ANOVA test detecting that QR estimates significantly differ across quantiles. Figure 2 presents the sequence of estimated coefficients from $\tau = 0.05$ to $\tau = 0.95$ by 0.05. Each panel represents a covariate in the model; the horizontal axes display the quantiles while the estimated effects are reported on the vertical axes (Costanzo & Desimoni, 2017). The horizontal black solid line parallel to the x-axis denotes zero value; the red solid line corresponds to the OLS coefficient along with the 95% confidence interval (red dashed lines). Each black dot is the slope coefficient for the quantile indicated on the x-axis with 95% confidence bands marked by grey color. As is stated in Costanzo & Desimoni (2017, p. 14), a joint inspection of the QR coefficients and the corresponding confidence bands, along with the OLS confidence intervals permits an understanding of whether the effect of predictors is significantly different across the conditional distribution of ln*ITIR* values compared to the OLS estimate.

Table 2. **Estimates of model parameters**

Quantile	Intercept	*p*-value	ln*T&TGDP*	*p*-value	*TTCI*	*p*-value
0.05	-5.4053	**0.0046**	0.4714	0.1090	1.9973	**0.0034**
0.10	-4.0616	**0.0003**	0.3676	**0.0135**	1.9955	**0.0000**
0.15	-2.8636	**0.0002**	0.3547	**0.0046**	1.8067	**0.0000**
0.20	-2.3779	**0.0013**	0.4429	**0.0001**	1.5475	**0.0000**
0.25	-1.9921	**0.0007**	0.4603	**0.0000**	1.4386	**0.0000**
0.30	-1.8968	**0.0003**	0.4249	**0.0000**	1.5046	**0.0000**
0.35	-1.5640	**0.0045**	0.4701	**0.0000**	1.3537	**0.0000**
0.40	-1.2560	**0.0113**	0.5307	**0.0000**	1.1847	**0.0000**
0.45	-1.1157	**0.0173**	0.5408	**0.0000**	1.1401	**0.0000**
0.50	-0.8730	**0.0496**	0.5574	**0.0000**	1.0614	**0.0000**
0.55	-0.8054	**0.0386**	0.5957	**0.0000**	0.9869	**0.0000**
0.60	-0.3838	0.3233	0.5985	**0.0000**	0.9032	**0.0000**
0.65	-0.3737	0.3712	0.6068	**0.0000**	0.8932	**0.0000**
0.70	-0.1972	0.5901	0.6521	**0.0000**	0.7728	**0.0000**
0.75	0.0232	0.9400	0.6495	**0.0000**	0.7296	**0.0000**
0.80	0.1581	0.5583	0.5993	**0.0000**	0.8452	**0.0000**
0.85	0.3072	0.3410	0.6016	**0.0000**	0.8115	**0.0000**
0.90	0.3589	0.3888	0.6178	**0.0000**	0.7730	**0.0000**
0.95	1.7307	**0.0123**	0.8044	**0.0000**	0.1068	0.6919
ANOVA F-value = 2.8539 (***p*-value** = 0.0000)						
OLS	-1.8751	**0.0000**	0.5662	**0.0000**	1.2720	**0.0000**
VIF			2.5720		2.5720	
BP = 8.5749 (***p*-value** = **0.0137**); R^2 = 0.8496						

Source: own calculations
Note: The *p*-values marked bold indicate the statistical significance at the significance level of 0.05.

Figure 2. **Estimates of model parameters by quantile level**



Source: own processing using R

The regression model parameter estimates obtained using OLS were statistically significant for all considered independent variables, multicollinearity was not present (*VIF* < 10), and the model explained up to 84.96% of the variability of the ln*ITIR*. However, we indicated the presence of heteroscedasticity, which we confirm through the Breuch-Pagan test (*BP* = 8.5749, *p* = 0.0137). Therefore, the use of QR is justified.

The results of QR show that ln*T&TGDP* is not statistically significant when τ = 0.05; *TTCI* is not statistically significant only for τ = 0.95. We show that a country's *ITIR* are determined by travel and tourism GDP and travel and tourism competitiveness. Through quantile regression, we found out

which percentiles of ln*ITIR* may be more affected by *TTCI* (we see high coefficients for low values of quantiles), by ln*T&TGDP* (we see high coefficients for high values of quantiles). Results of QR confirmed the formulated hypothesis that *ITIR* are positively influenced by travel and tourism GDP and travel and tourism competitiveness. Very simply, it means that positive coefficients of travel and tourism GDP and TTCI indicate that as the value of the independent variable increases, the mean of the international tourism inbound receipts also tends to increase.

Table 3 shows the descending order of countries according to the value of ln*ITIR*. Moreover, to better interpretation of QR results, we denote, which country represent analyzed quantiles (from τ = 0.05 to τ = 0.95 by 0.05). To interpret the results, e.g., for the median (τ = 0.50; in Table 3: Island), we see that the change of *T&TGDP* by 1% will be associated with a 0.55% change in *ITIR* (fixing all the other independent variables). A change in the value of the *TTCI* indicator by one unit will be associated with an 189.04% change in *ITIR*. Our results are most representative for countries between the 10th (country ID 113 – Namibia) and 55th (country ID 57 – Peru) percentiles of *ITIR* because that is where all the coefficients (included intercept) of the model are statistically significant. These are the countries with the lowest *ITIR*. The largest group consists of 20 countries from Europe and Eurasia, 16 countries from Sub-Saharan Africa, and 11 countries from South America (see map in Figure 3). The map (Figure 3) shows that the countries are also geographically close. The tourism policymakers of these countries could develop joint strategies to promote them as tourist destinations to increase the development and competitiveness of the tourism sector.

Table 3. **Order of countries according to the value of ln*ITIR* (descending)**

ID	Country	ID	Country	ID	Country	ID	Country	ID	Country	ID	Country
1	USA	22	NLD	43	HUN	**64**	**ISL** (τ = 0.50)	85	LVA	106	SEN
2	ESP	23	CHE	44	QAT	65	SVK	86	UGA	107	**PAK** (τ = 0.15)
3	FRA	24	SWE	45	**BRA** (τ = 0.65)	66	JAM	87	KEN	108	BGD
4	THA	25	KOR	46	IRL	67	SVN	88	**SLV** (τ = 0.30)	109	MKD
5	GBR	26	**POL** (τ = 0.80)	47	NOR	68	GEO	89	GHA	110	MDA
6	ITA	27	IDN	48	ARG	69	URY	90	NIC	111	KWT
7	**AUS** (τ = 0.95)	28	BEL	49	COL	70	**NGA** (τ = 0.45)	91	BOL	112	MLI
8	DEU	29	SAU	50	JOR	71	ROU	92	LAO	113	**NAM** (τ = 0.10)
9	JPN	30	HRV	51	**LUX** (τ = 0.60)	72	TZA	93	HND	114	MOZ
10	HKG	31	NZL	52	PAN	73	ALB	94	BWA	115	ZWE
11	CHN	**32**	**RUS** (τ = 0.75)	53	BGR	74	KAZ	**95**	**ZMB** (τ = 0.25)	116	DZA
12	IND	33	VEN	54	LKA	75	**OMN** (τ = 0.40)	96	NPL	117	GMB
13	TUR	34	ZAF	55	CRI	76	MUS	97	PRY	118	YEM
14	**MEX** (τ = 0.90)	35	DNK	56	IRN	77	MLT	98	CMR	119	SLE
15	ARE	36	EGY	57	**PER** (τ = 0.55)	78	EST	99	TTO	**120**	**MWI** (τ = 0.05)
16	AUT	37	LBN	58	BHR	79	GTM	100	RWA	121	TCD
17	CAN	38	MAR	59	KHM	80	SRB	101	**ETH** (τ = 0.20)	122	LSO
18	SGP	39	**DOM** (τ = 0.70)	60	CHL	81	LTU	102	CPV	123	MRT
19	MYS	40	PHL	61	FIN	82	**TUN** (τ = 0.35)	103	KGZ	124	TJK
20	**PRT** (τ = 0.85)	41	CZE	62	CYP	83	ARM	104	MNG	125	BDI
21	GRC	42	ISR	63	AZE	84	MNE	105	CIV		

Source: own calculations

Note: We use a standard defining codes for the names of countries (ISO 3166-1). Cell colors indicates these regions: light grey – The Americas, dark grey – Asia-Pacific, light blue – Europe and Eurasia, dark blue – Middle East and North Africa, white – Sub-Saharan Africa

Figure 3. **Selected countries from ID 57 to ID 113**

Source: own processing
Note: The ID is assigned in Table 3.

5. Discussion

Our results can be compared with existing studies that have also considered *TTCI* in tourism performance modelling. Joshi et al. (2017) created a model that verified the dependence of *ITIR* on the *TTCI* pillars by using panel regression. Their results have shown that the most important pillars to which *ITIR* respond are natural resources, cultural resources, and health and hygiene. On the contrary, the pillars focused on infrastructure, security, or price competitiveness proved to be the least important.

Perez Leon et al. (2021) selected only around 30% of the *TTCI* indicators to assess the tourism competitiveness of the Caribbean countries. Specifically, they omitted all subjective indicators (obtained by a questionnaire survey). One of the most recent studies is a study by Bazargani & Kiliç (2021), who used panel regression to create tourism performance models, which included *TTCI* as an independent variable.

Previous studies dealing with tourism performance modelling and destination competitiveness have proposed models for all countries or smaller regions and groups. E.g., Bazargani & Kiliç (2021) created tourism performance models for all countries and specific models for four groups of countries according to income (low-income, low-middle-income, upper-middle-income, high-income) and for five groups of countries according to location (Americas, Asia, Europe, the Middle East/North Africa, and Africa region). The proposed model in this paper for 125 countries is specific because we consider conditional quantiles of the dependent variable (not specific regions). The advantage of QR is that it

can determine whether individual percentiles of a dependent variable are more affected by independent variables than other percentiles of a dependent variable, which is then reflected in the change in regression coefficients. Thus, it is possible to implement destination policy for groups of countries created according to the affiliation to selected quantiles. The results of this paper enable us to develop different strategies, e.g., for the first seven countries from Table 3 (τ = 0.95) than for the remaining 118.

Based on the conducted research, we see the direction of future research. One would expect a new model to be estimated on newer data. However, the last publication of TTCI values was in 2019. In May 2022, a new index called Travel and Tourism Development Index (TTDI) was introduced (see Soshkin & Calderwood, 2022). It means that the new regression model would already contain other independent variables. TTDI values could be used instead of TTCI values. Another option for future research is to add more independent variables having a relation to destination performance. Considering the theoretical background, it could be, e.g., tourist arrivals, number of nights spent, average receipts per arrival (Maráková et al., 2016; Hanafiah & Zulkifly, 2019), travel and tourism industry employment (Blanke & Chiesa, 2007; Calderwood & Soshkin, 2019). The disadvantage is that future research will have to be realized using old data from 2019 (due to the use of TTCI), or TTCI data will not be used and will be replaced by TTDI data, but this will not allow an accurate comparison of results with our research.

6. Conclusion

Tourism is one of the economic sectors most affected by the COVID-19 global pandemic. In this sector, there has been a rapid decline in demand and an increase in unemployment. The international tourism receipts in 2021 (USD 700-800 billion) were still below the pre-pandemic year of 2019 (USD 1.7 trillion). The worst year on record for tourism was 2020 (USD 638 billion) (UNWTO, 2022). For economies that are heavily dependent on tourism, this situation has devastating consequences. However, due to the evolving nature of the situation, it is still not possible to estimate the overall impact of the COVID-19 pandemic on global tourism. Each country is trying to deal with the situation as effectively as possible.

This research emphasizes the theoretical background and empirical evidence of the influence of tourism competitiveness and travel and tourism GDP on *ITIR*. The most significant contribution of this paper is the inclusion of an indicator measuring tourism competitiveness in the model assessing the tourism industry performance (measured by *ITIR*). The realized study confirmed the importance of the destination's competitiveness as a source of tourism performance. The travel and tourism GDP was also a significant independent variable influencing *ITIR*. The second contribution is the usage of quantile regression when modelling *ITIR*. The results obtained by quantile regression have shown that it is appropriate to create different tourism development strategies, for different groups of countries, according to the conditional quantiles of the dependent variable (*ITIR*).

The estimated model for 125 countries can help tourism policymakers develop strategies, international cooperation and driving forces for international tourism recovery. Given the changing conditions of the tourism market in the context of globalization and the current COVID-19 pandemic, this paper can help policymakers and managers not only in countries with a high level of tourism competitiveness but also in those with a low level. A country with a low *ITIR* can strengthen its tourism potential by increasing its competitiveness. To formulate an effective tourism policy, policymakers and destination managers in countries with low tourism competitiveness need to think about the elements that can increase a country's attractiveness as a tourism destination. It means focusing on the various factors that motivate individuals to choose a particular country rather than another.

This study has several limitations. The first is the lack of homogeneous data evaluating the country's tourism competitiveness. The lack of universal statistics and published online data is a

problem in the tourism sector research. On the other hand, such data can provide a lot of information, but it may not be of good quality. Furthermore, we must point out that, although the *TTCI* is probably the best-known tool used to evaluate countries according to their tourism competitiveness, it is not a tourism performance indicator. It is an index made of several metrics that can make it easier to determine tourism competitiveness. It is, therefore, not possible to identify, from this index, which inputs can be most reflected in the performance of the entire tourism industry. Another limitation is that the *TTCI* calculation methodology has been changed (in May 2022), and the new Travel and Tourism Development Index (TTDI) 2021 was published (see Soshkin & Calderwood, 2022). Unfortunately, this will not allow an objective comparison of new models in further research.

Acknowledgements

This paper was supported by the research grant KEGA no. 001PU-4/2022 "Application of Modern Trends in Quantitative Methods in the Teaching of Financial and Managerial Subjects". This work was supported by the Slovak Research and Development Agency under the Contract no. APVV-20-0338.

References

1. Algieri, B., Aquino, A., & Succurro, M. (2018). International competitive advantages in tourism: An eclectic view. *Tourism management perspectives*, *25*, 41–52. https://doi.org/10.1016/j.tmp.2017.11.003
2. Arain, H., Han, L., Sharif, A., & Meo, M. S. (2020). Investigating the effect of inbound tourism on FDI: The importance of quantile estimations. *Tourism Economics*, *26*(4), 682–703. https://doi.org/10.1177/1354816619859695
3. Assaf, A. G., & Josiassen, A. (2012). Identifying and ranking the determinants of tourism performance: A global investigation. *Journal of Travel Research*, *51* (4), 388–399. DOI: 10.1177/0047287511426337
4. Assaf, A. G., & Tsionas, E. G. (2015). Incorporating destination quality into the measurement of tourism performance: A Bayesian approach. *Tourism Management*, *49*, 58–71. https://doi.org/10.1016/j.tourman.2015.02.003
5. Assaf, A. G., & Tsionas, M. (2018). Changing the basics: toward more use of quantile regressions in hospitality and tourism research. *International Journal of Hospitality Management*, *72*, 140–144. https://doi.org/10.1016/j.ijhm.2018.01.009
6. Barbe, F. T., Triay, M. G., & Häufele, C. (2016). The competitiveness of the Uruguayan rural tourism sector and its potential to attract German tourists. *Competitiveness Review*, 26 (2), 166–187. doi:10.1108/CR-06-2015-0050
7. Bazargani, R. H. Z., & Kiliç, H. (2021). Tourism competitiveness and tourism sector performance: Empirical insights from new data. *Journal of Hospitality and Tourism Management*, *46*, 73–82. https://doi.org/10.1016/j.jhtm.2020.11.011
8. Blanke, J., & Chiesa, T. (2007). *The Travel & Tourism Competitiveness Report 2007: Furthering the Process of Economic Development*. Geneva: The World Economic Forum. ISBN 978-92-95044-01-2. Retrieved May 31, 2022, from http://cdi.mecon.gov.ar/bases/docelec/wef/ttcr/2007.pdf.
9. Calderwood, L. U., & Soshkin, M. (2019). *The Travel & Tourism Competitiveness Report 2019. Travel and Tourism at a Tipping Point*. Geneva: World Economic Forum. ISBN 978-2-940631-01-8. Retrieved May 31, 2022, from https://www.weforum.org/reports/the-travel-tourism-competitiveness-report-2019/?DAG=3&gclid=CjwKCAiAk--

dBhABEiwAchIwkXjXvxoGkDATXcsD95W6ALJn5T468qf_WODCbH6iXHM3Ia7KT4ZZq xoCmIMQAvD_BwE

10. Chen, M. H. (2016). A quantile regression analysis of tourism market growth effect on the hotel industry. *International Journal of Hospitality Management*, 52, 117–120. https://doi.org/10.1016/j.ijhm.2015.10.001
11. Costanzo, A. & Desimoni, M. (2017). Beyond the mean estimate: a quantile regression analysis of inequalities in educational outcomes using INVALSI survey data. *Large-Scale Assessments in Education, 5* (14), 1–25. https://doi.org/10.1186/s40536-017-0048-4
12. Croes, R., & Kubickova, M. (2013). From potential to ability to compete: Towards a performance-based tourism competitiveness index. *Journal of Destination Marketing & Management*, *2* (3), 146–154. https://doi.org/10.1016/j.jdmm.2013.07.002
13. Delgado, M., Porter, M. E., & Stern, S. (2016). Defining clusters of related industries. *Journal of Economic Geography*, *16*(1), 1–38. https://doi.org/10.1093/jeg/lbv017
14. de Paula Aguiar-Barbosa, A., Chim-Miki, A. F., & Kozak, M. (2021). Two decades of evolution in tourism competitiveness: a co-word analysis. *International Journal of Tourism Cities*, *7* (2), 435–462. https://doi.org/10.1108/IJTC-10-2020-0224
15. Dias, J. G. (2017). Environmental sustainability measurement in the Travel & Tourism Competitiveness Index: An empirical analysis of its reliability. *Ecological Indicators*, *73*, 589–596. https://doi.org/10.1016/j.ecolind.2016.10.008
16. Dupeyras, A., & MacCallum, N. (2013). Indicators for measuring competitiveness in tourism: A guidance document. *OECD Tourism Papers, 2/2013*. https://doi.org/10.1787/5k47t9q2t923-en
17. Fernández, J. A. S., Azevedo, P. S., Martín, J. M. M., & Martín, J. A. R. (2020). Determinants of tourism destination competitiveness in the countries most visited by international tourists: Proposal of a synthetic index. *Tourism Management Perspectives*, *33*, 100582, 1–13. https://doi.org/10.1016/j.tmp.2019.100582
18. Ferreira, F., & Castro, C. (2020). Competitiveness of European Tourism: A Cluster Analysis. In Martí-Parreño, J., Calvet, R. G., & De Prat, J. M. (Eds.). *Proceedings of the 3rd International Conference on Tourism Research* (pp. 52–59). Reading: Academic Conferences International Limited. DOI:10.34190/IRT.20.030
19. Gavurova, B., Skare, M., Belas, J., Rigelsky, M., & Ivankova, V. (2023). The relationship between destination image and destination safety during technological and social changes COVID-19 pandemic. *Technological Forecasting and Social Change*, 191, 122488. https://doi.org/10.1016/j.techfore.2023.122488
20. Göral, R. (2016). Price competitiveness of international tourism destinations and tourism demand, tourism receipts relationship. *European Journal of Multidisciplinary Studies, 1* (2), 195–203. Retrieved May 31, 2022, from https://revistia.com/files/articles/ejms_v1_i2_16/Ramazan.pdf.
21. Hassan, S., & Mahrous, A. A. (2019). Nation branding: the strategic imperative for sustainable market competitiveness. *Journal of Humanities and Applied Social Sciences, 1* (2), 146–158. https://doi.org/10.1108/JHASS-08-2019-0025
22. Hanafiah, M. H., & Zulkifly, M. I. (2019). Tourism destination competitiveness and tourism performance: A secondary data approach. *Competitiveness Review: An International Business Journal*, 29 (5), 592–621. DOI 10.1108/CR-07-2018-0045
23. Ivanov, S., & Ivanova, M. (2016). Do hotel chains improve destination's competitiveness?. *Tourism Management Perspectives*, *19*, 74–79. https://doi.org/10.1016/j.tmp.2016.04.007
24. Jena, S. K., & Dash, A. K. (2020). Does exchange rate volatility affect tourist arrival in India: A quantile regression approach. *Regional and Sectoral Economic Studies*, *20*(2), 65–78. Retrieved May 31, 2022, from https://www.usc.es/economet/reviews/eers2025.pdf.

25. Joshi, O., Poudyal, N. C., & Larson, L. R. (2017). The influence of sociopolitical, natural, and cultural factors on international tourism growth: a cross-country panel analysis. *Environment, Development and Sustainability*, *19* (3), 825–838. https://doi.org/10.1007/s10668-016-9767-x
26. Kalina, J., & Vidnerová, P. (2019). Implicitly weighted robust estimation of quantiles in linear regression. In Houda, M., & Remeš, R. (Eds.), Conference Proceedings of the 37th International Conference on Mathematical Methods in Economics 2019 (pp. 25–30). České Budějovice: University of South Bohemia in České Budejovice. Retrieved May 31, 2022, from https://invenio.nusl.cz/record/403665.
27. Khan, S. A. R., Qianli, D., SongBo, W., Zaman, K., & Zhang, Y. (2017). Travel and tourism competitiveness index: The impact of air transportation, railways transportation, travel and transport services on international inbound and outbound tourism. *Journal of Air Transport Management*, *58*, 125–134. https://doi.org/10.1016/j.jairtraman.2016.10.006
28. Koenker, R. (2005). *Quantile Regression*. New York: Cambridge University Press. ISBN 978-0-0521-845731-1.
29. Koenker, R., Chernozhukov, V., He, X., & Peng, L. (2017). *Handbook of Quantile Regression*. Boca Ranton: CCR Press. https://doi.org/10.1201/9781315120256
30. Kunst, I., & Ivandić, N. (2021). The viability of the travel and tourism competitiveness index as a reliable measure of destination competitiveness: the case of the Mediterranean region. *European Journal of Tourism Research*, *27*, 2704–2704. https://doi.org/10.54055/ejtr.v27i.2124
31. Lacko, R., Hajduova, Z., Mura, L., Dzogan, M. (2023). The Attractiveness of Foreign Direct Investments for Business: the Case of the Selected European Union members. *Transformations in Business & Economics*, Vol. 22, No 2 (59), 2023, pp. 27-40
32. Lee, C. C., Chen, M. P., Wu, W., & Xing, W. (2021). The impacts of ICTs on tourism development: International evidence based on a panel quantile approach. *Information Technology & Tourism*, 23(4), 509–547. https://doi.org/10.1007/s40558-021-00215-4
33. Lin, Y. X., Chen, M. H., Lin, B. S., & Su, C. H. (2020). Asymmetric effects of cultural and natural World Heritage Sites on tourism receipts. *Current Issues in Tourism, 23* (24), 3134–3147. https://doi.org/10.1080/13683500.2019.1697649
34. Lolos, S., Palaios, P., & Papapetrou, E. (2021). Tourism-led growth asymmetries in Greece: evidence from quantile regression analysis. *Portuguese Economic Journal*, 1–24. https://doi.org/10.1007/s10258-021-00195-7
35. Maráková, V., Dyr, T., & Wolak-Tuzimek, A. (2016). Factors of tourism's competitiveness in the European union countries. *E&M Economics and Management*, 19 (3), 92-109. DOI: 10.15240/tul/001/2016-3-007
36. Marrocu, E., Paci, R., & Zara, A. (2015). Micro-economic determinants of tourist expenditure: A quantile regression approach. *Tourism Management*, *50*, 13–30. https://doi.org/10.1016/j.tourman.2015.01.006
37. Martín, J. C., Mendoza, C., & Román, C. (2017). A DEA travel–tourism competitiveness index. *Social Indicators Research*, *130* (3), 937–957. https://doi.org/10.1007/s11205-015-1211-3
38. Moreno-Izquierdo, L., Rubia-Serrano, A., Perles-Ribes, J. F., Ramón-Rodríguez, A. B., & Such-Devesa, M. J. (2020). Determining factors in the choice of prices of tourist rental accommodation. New evidence using the quantile regression approach. *Tourism Management Perspectives*, *33*, 100632. https://doi.org/10.1016/j.tmp.2019.100632
39. Perez Leon, V. E., Pérez, F., Contreras Rubio, I., & Guerrero, F. M. (2021). An approach to the travel and tourism competitiveness index in the Caribbean region. *International Journal of Tourism Research*, *23* (3), 346–362. https://doi.org/10.1002/jtr.2411

40. Pérez-Rodríguez, J. V., & Ledesma-Rodriguez, F. (2021). Unconditional quantile regression and tourism expenditure: The case of the Canary Islands. *Tourism Economics*, 27(4), 626–648. https://doi.org/10.1177/1354816619891552
41. Prokopenko, O., Mishenin, Y., Mura, L., Yarova, I. (2020). Environmental and economic regulation of sustainable spatial agroforestry. *International Journal of Global Environmental Issues*, 19(1-3), pp. 109-128
42. Pulido-Fernández, J. I., & Rodríguez-Díaz, B. (2016). Reinterpreting the World Economic Forum's global tourism competitiveness index. *Tourism Management Perspectives*, *20*, 131–140. https://doi.org/10.1016/j.tmp.2016.08.001
43. Radovanov, B., Dudic, B., Gregus, M., Marcikic Horvat, A., & Karovic, V. (2020). Using a two-stage DEA model to measure tourism potentials of EU countries and Western Balkan countries: An approach to sustainable development. *Sustainability*, *12* (12), 4903. https://doi.org/10.3390/su12124903
44. Rajnoha, R., Lesnikova, P., Stefko, R., Schmidtova, J., & Formanek, I. (2019). Transformations in strategic business planning in the context of sustainability and business goals setting. *Transformations in Business & Economics*, *18*(2), 44-66.
45. Reisinger, Y., Michael, N., & Hayes, J. P. (2019). Destination competitiveness from a tourist perspective: A case of the United Arab Emirates. *International Journal of Tourism Research*, *21* (2), 259–279. https://doi.org/10.1002/jtr.2259
46. Sahni, H., Nsiah, C., & Fayissa, B. (2021). The African economic growth experience and tourism receipts: A threshold analysis and quantile regression approach. *Tourism Economics*, *27*(5), 915–932. https://doi.org/10.1177/1354816620908688
47. Sánchez, A. G., & López, D. S. (2015). Tourism destination competitiveness: the Spanish Mediterranean case. *Tourism Economics*, *21* (6), 1235–1254. doi: 10.5367/te.2014.0405
48. Shahzad, S. J. H., Shahbaz, M., Ferrer, R., & Kumar, R. R. (2017). Tourism-led growth hypothesis in the top ten tourist destinations: New evidence using the quantile-on-quantile approach. *Tourism Management*, *60*, 223–232. https://doi.org/10.1016/j.tourman.2016.12.006
49. Sharma, A., Woodward, R., & Grillini, S. (2020). Unconditional quantile regression analysis of UK inbound tourist expenditures. *Economics Letters*, *186*, 108857. https://doi.org/10.1016/j.econlet.2019.108857
50. Skare, M., Gavurova, B., & Polishchuk, V. (2023a). A Fuzzy Multicriteria Model of Sustainable Tourism: Examples From the V4 Countries. *IEEE Transactions on Engineering Management*, 1-12. https://doi.org/10.1109/tem.2023.3239519
51. Skare, M., Gavurova, B., Polishchuk, V., Nawazish, M. (2023b). A fuzzy model for evaluating the level of satisfaction of tourists regarding accommodation establishments according to social class on the example of V4 countries. *Technological Forecasting and Social Change*, 193, 122609.
52. https://doi.org/10.1016/j.techfore.2023.122609
53. Soshkin, M., & Calderwood, L. U. (2022). *Travel & Tourism Development Index 2021: Rebuilding for a Sustainable and Resilient Future*. Geneva: World Economic Forum. Retrieved May 31, 2022, from https://www.weforum.org/reports/travel-and-tourism-development-index-2021/.
54. Stefko, R., Bacik, R., Fedorko, R., Gavurova, B., Horvath, J., & Propper, M. (2017). Gender differences in the case of work satisfaction and motivation. *Polish Journal of Management Studies*, *16*(1), 215-225. https://doi.org/10.17512/pjms.2017.16.1.18
55. Stefko, R., Fedorko, R., Bacik, R., Rigelsky, M., & Olearova, M. (2020). Effect of service quality assessment on perception of TOP hotels in terms of sentiment polarity in the Visegrad group countries. *Oeconomia Copernicana*, *11*(4), 721-742. https://doi.org/10.24136/oc.2020.029
56. UNWTO. (2022). Impact Assessment of the Covid-19 Outbreak on International Tourism. Retrieved May 31, 2022, from https://www.unwto.org/impact-assessment-of-the-covid-19-outbreak-on-international-tourism.

57. Waldmann, E. (2018). Quantile regression: a short story on how and why. *Statistical Modelling*, *18*(3-4), 203–218. https://doi.org/10.1177/1471082X18759142
58. Wu, T. P., & Wu, H. C. (2018). The influence of international tourism receipts on economic development: Evidence from China's 31 major regions. *Journal of Travel Research, 57* (7), 871–882. https://doi.org/10.1177/0047287517722231
59. Wu, T. P., Ai, C. H., & Wu, H. C. (2022). The linkage between international tourism receipts and economic development: Evidence from quantile-on-quantile approaches. *Current Issues in Tourism*, published online, 1–14. https://doi.org/10.1080/13683500.2022.2053076

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