Tourism Demand in Tunisia: A VECM Approach

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Abstract

This research aimed to study the determinants of tourism demand in Tunisia from 1995 to 2019 with four independent variables: gross domestic product, consumer price index, the real exchange rate, and air transport passengers carried. The research employed the Unit root test, Co-integration test, and Vector Error Correction model (VECM) to examine the variables' short- and long-run relationship dynamics. The results show that co-integrating relations exist among the variables; all independent variables negatively impact tourism demand except Air transport. Depending on the results obtained, policymakers should be aware of the negative effect of the country's political instability on the extent of external tourism demand. In this sense, the government must restore political stability to encourage tourists to visit Tunisia. Future studies should consider factors such as the economy's trade openness and oil prices.

Introduction

Tourism is one of the world's major economic sectors, mainly because of the creation of wealth and employment (Hącia, 2019) and its positive spillover effects. It represents the key lever of socio-economic development in many developing countries. In a globalized world, where this sector is growing strongly and continuously, Tunisia must seize this strategic opportunity to position itself favourably and sustainably on the chessboard of the global tourism industry. Tunisia's tourism competitiveness has always been held thanks to its natural assets, geographical position, thousand-year-old history, and rich and diversified heritage. Tourism is a significant source of economic growth in this country (Suhel & Bashir, 2018) because of its contribution to covering the trade balance deficit (Jin et al., 2021) and solving the unemployment problem. At the same time, the tourism sector in Tunisia reveals a strong seasonal behaviour, resulting in a concentration of demand limited to a few months of the year. The key reason for such a situation is Tunisian tourism's seaside nature, which attracts the largest public during the high season (July, August, and September). The seasonality negatively

affects the profitability of this sector and its financial performance. To remedy this situation, the tourism authorities are anxious to spread the tourism demand over the year, bringing multiple benefits.

Literature Review

Several studies have examined the variables that impact tourism demand since the earliest research on this subject was published in the 1960s. These studies employed varying methodologies and considered different timeframes and geographical regions. Great strides have since been made by relying on the ever-increasing availability of data and the advancement of econometric methods. This paper responds to numerous empirical studies relating to tourism demand.

The study related to the determinants of tourism demand (Martins et al., 2017), which employs an unbalanced panel of 218 countries from 1995 to 2012, shows that an increase in global GDP per capita, a devaluation of the country's currency, as well as a decrease in relative domestic costs, raise tourism demand. The same approach was adopted in the study of Pavlic and co-authors (2015), which indicated the stability of the long-term equilibrium relationship between tourist arrivals, economic openness, the real effective exchange rate, and gross domestic flows from 1996-2013 in Croatia. Similarly, Ongan and co-authors (2017) examine the effects of real exchange rates and income on inbound tourism (tourist arrivals) of the United States from Germany, France, the United Kingdom, the Netherlands, Italy, Spain, and Sweden in the period from 1996Q3 to 2015Q1. Panel co-integration analysis was performed using the cross-sectional dependence test and the common correlated effects (CCE) technique. According to these empirical findings, tourists visiting the United States, were sensitive to changes of the real exchange rate more than to changes in GDP. Conversely, to French tourists, GDP gained importance, while the real exchange rate was of higher significance to British tourists. Rafiei and Abbaspoor (2021) investigated the impact of the exchange rate increase on Iran's domestic tourism demand. Following their findings, demand for domestic travel decreases for all households after the exchange rate was raised by 50%.

Applying panel data collected over seven years for 32 countries (2000-2007), Göçer and co-authors (2010) analyzed the socio-economic factors influencing Turkey's demand for international tourists. They found out, firstly, that the actual income of different groups in their countries of origin, the value of trade between the origin countries and Turkey, and the accommodation capacity are positively related to tourism demand. Contrary to what was expected, travel costs and exchange rates positively affected the number of tourists. The authors explain this finding by elucidating that Turkey provides relatively low-cost vacation packages. The researchers considered the official visits of the Turkish president and prime minister to the countries of origin in their model, which further illuminates the uniqueness of this study. It showed that this variable has a positive value despite its statistical irrelevance.

Using a panel data approach, Tavares and Leitao (2016) examined the factors influencing Brazil's international tourism demand. The authors endeavoured to determine the most important factors for foreign tourists to travel to Brazil from 2004 to 2013 using exchange rate, distance, and inflation rate as independent variables. They showed that the exchange rate was positively correlated to tourism demand. Khoshnevis Yazdi and Khanalizadeh (2016) used the Gravity framework to determine the coefficients of the factors that affected foreign tourism demand in the United States from 1995 to 2014. Autoregressive Distributed Lag methods were used to look at a panel dataset of tourists' visits in 14 countries. The findings show that the real gross domestic product, consumer price index, real exchange rate, and certain events considerably affect the number of people who want to travel internationally. Baghirov and Sarkhanov (2023) examined the relationship between tourism receipts, the volume of foreign visitors, and the consumer price index in a few African nations with significant tourism receipts. According to their findings, there is a statistically significant long-term relationship between tourism revenues, the number of international tourists, and the consumer price index, with the number of international tourists having a positive effect and the consumer price index having a negative impact.

Given tourism's role in the Tunisian economy, our research completed what had been approached in some previous studies (e. g., Balsalobre-Lorente et al., 2021); the task at hand was selecting the determinants of tourism demand in Tunisia using the independent variables that were used in previous studies, such as real gross domestic product, consumer price index, and air transport.

Data and Model Estimation

Data

As Ivanovski and co-authors (2018) indicated, visitor arrivals remain the primary metric in tourism-demand research. In our study, tourism demand (TOURISM) is evaluated by the number of tourists arriving from the

country of origin to the destination country (Tunisia). CPI is Consumer price index (2010 = 100) of the country of origin to CPI of the destination country (Tunisia), GDP is real gross domestic product per capita of the country of origin to destination (Tunisia) GDP/capita, in $ US courants, REXCH is the real exchange rate in LCU per US$, the air transport (AIR TRANSPORT) is the total number of passengers carried at flights in the international airports in Tunisia. We used annual time series data on tourist arrivals from 1995-2019 as a dependent variable for the international tourism demand. The data for all variables were gathered from the World Bank database.

Model

Our research is based on Khoshnevis Yazdi and Khanalizadeh (2016) methodology, with some changes to the variables employed to accommodate the accessible data and the Tunisian study case. We employed the Unit root test, Co-integration test (Bozkurt, 2014), and Vector Error Correction Model (VECM) by using the Eviews-10 package. The model is the following:

$$TOURISM = F(CPI, GPD, REXCH, AIRTRANSPORT) \quad (1)$$

where:

TOURISM is international tourism demand (the number of visitors)
CPI is the consumer price index (Consumer price index (2010 = 100))
GDP is real gross domestic product (GDP per capita (in current US$))
REXCH is real exchange rate (Official exchange rate (LCU per US$, period average)
AIRTRANSPORT represents passengers carried by air transport.

In the research we used the Johansen Co-integration test and the Vector Error Correction model (VECM) to investigate the long-term equilibrium and short-term dynamic relationship between tourism demand and selected independent variables for Tunisia. The VECM model is commonly used to investigate long-term and short-term equilibrium relationships including co-integration variables. If the variables in this study are cointegrated, the VECM equation is as follows:

$$\begin{aligned}\Delta TOURISM_t &= \beta_0 + \sum_{i=0}^{n} \beta_1 \Delta TOURISM_{t-i} + \\ &+ \sum_{i=0}^{n} \beta_2 \Delta CPI_{t-i} + + \sum_{i=0}^{n} \beta_3 \Delta GPD_{t-i} + \\ &+ \sum_{i=0}^{n} \beta_4 \Delta REXCH_{t-i} + \sum_{i=0}^{n} \beta_5 \Delta AIRTRANSPORT_{t-i} + U_t\end{aligned} \quad (2)$$

where:

Δ is the 1st difference, t is time, i is number of lags
ECT_{t-1} is the error correction term lagged one period
β_6 is the long-run coefficient of the error correction term
β_0 is the intercept (constant)
β_1, β_2, β_3, β_4, β_5 are coefficients, and
U is error term.

Findings

Descriptive statistics

To test the determinants of tourism demand in Tunisia, we began the empirical research with a preliminary analysis of the variables utilized. The descriptive statistics are shown in Table 1.

Descriptive statistics show the unique features of the data used. For example, the average mean and median value of GDP (3.42E+10), i.e., real GDP, is the highest among the values of other variables (i.e., CPI = 96.46180, TOURISM =6157080, REXCH = 1.537644, AIR TRANSPORT = 266883, respectively). Table 1 also demonstrates that 27.48830 is the maximum and 4.76E+10 is the minimum value of GDP, thus, this variable is highly volatile. The statistics of kurtosis and skewness were also computed from a sample of 25 observations. The findings show that all the variables are positively skewed except the GDP value. Evidence derived from the Jarque – Bera (JB) normality test shows that all the variables used in the model are normally distributed. The variables are first differenced and computed by the ratio relative to the prior observation.

Stationarity testing

First, our study performs unit root tests for tourism demand and other independent variables (CPI, GDP, REXCH, and AIR TRANSPORT). If these variables are non-stationary, it will be necessary to establish the orders of integration for the variables in question. Table 2 shows the result of PP and ADF tests. The tests are employed to identify the existence of unit root in each series and, therefore, to allow us to establish whether the variables are stationary of order 0, I (0), or if they follow a non-stationary trend of order 1, I (1) or even of a higher order.

As can be seen from Table 2, all the series at non-stationary because the null hypotheses are not rejected at a 5 percent level of significance for a constant, and a

constant and a trend in all cases. However, all five variables are stationary at 1st difference; I (1) as the H0 of unit roots at difference are rejected at 1 percent significance level for both the constant and the constant plus trend case. This analysis demonstrates that no data series is stationary at the level, however, they are stationary at the first difference. As a result, these variables may have a long-term relationship. Thus, keeping this view, we employ Johansen's co-integration approach to discover long-run relations as the next step.

Johansen co-integration test

This research employs Johansen co-integration test (Bozkurt, 2014). When all time series are non-stationary, assessing whether there is a long-term relationship between the variables is necessary. The author uses the VAR (Vector Autoregressive) order of 2 as selected by the Akaike criterion based on the levels of the VAR model (Table 3). The findings from Johansen co-integration tests show a unique long-term or equilibrium link between variables. Both trace statistics and λ-max statistics demonstrate that there appears to be one co-integrating vector at a 5% significance level (Table 4).

The co-integration analysis makes it possible to identify the proper relationship between two variables by investigating the existence of a co-integrating vector (Tang & Tan, 2015). In our example, the Johansen test

Table 1

Descriptive statistics of model parameters

	TOURISM	CPI	GDP	REXCH	AIRTRANSPORT
Mean	6157080.	96.46180	3.42E+10	1.537644	2668837
Median	5998000.	89.46071	3.88E+10	1.370683	2054679
Maximum	9429000.	155.3250	4.76E+10	2.934433	4648608
Minimum	3885000.	63.11477	1.80E+10	0.945750	1371200
Std. Dev.	1413026.	26.22821	1.03E+10	0.508429	1070935
Skewness	0.328579	0.693842	-0.264807	1.418518	0.659198
Kurtosis	2.446240	2.443492	1.462616	4.175255	1.939310
Jarque-Bera	0.769279	2.328509	2.754208	9.822909	2.982534
Probability	0.680696	0.312155	0.252308	0.007362	0.225087
Sum	1.54E+08	2411.545	8.54E+11	38.44110	66720926
Sum Sq. Dev.	4.79E+13	16510.05	2.54E+21	6.203990	2.75E+13
Observations	025	025	025	025	025

Source: Author's research

Table 2

Stationarity test results

			TOURISM	CIP	GDP	REXCH	AIRTRANSPORT
PP test	Level	t-Stat	-0.5860	-1.5680	2.0236	-1.8274	-0.4512
		Prob	0.8562	0.4829	0.9997	0.3586	0.8846
	First Diff	t-Stat	-4.1869***	-3.1141**	-4.4865***	-8.4209***	-3.9136***
		Prob	0.0038	0.0395	0.0020	0.0000	0.0070
ADF test	Level	t-Stat	-0.8438	-1.6661	3.5524	-1.9943	-0.5102
		Prob	0.7880	0.4349	1.0000	0.2870	0.8728
	First Diff	t-Stat	-4.2328***	-3.1243**	-4.3140***	-6.3427***	-4.2951***
			0.0034	0.0387	0.0034	0.0000	0.0031
Order of integration			1	1	1	1	1

Notes: (**) Significant at 5%, (***) Significant at 1%
Source: Author's research

is performed under the assumption of the existence of a constant (C) and a trend. Two statistics appear in this test: the trace statistic and the max-eigenvalue statistic (the maximum eigenvalue). These two statistics show compatible results here. The trace statistics reveal the existence of the 5% confidence interval of three co-integrating vectors, while, the maximum eigenvalue indicates two co-integrating vectors. Therefore, it is concluded that these series are co-integrated, and thus, a long-run relationship between the TOURISM of Tunisia and the other independent variables exists.

Vector Error Correction Model (VECM) Results

The estimate of the VECM is presented in Table 5. The estimated coefficient for CPI is negative and significant in the long run (-1.90), which could lead to the conclusion that tourism arrival in Tunisia could be increased by decreasing the cost of living. A tourism price index would be more accurate and easily available (Khoshnevis Yazdi & Khanalizadeh, 2016). The tourists are, however, not sensitive to prices related to their destinations. The county where the airport is located has experienced increased tourism inflows, fueled mainly by foreign visitors (Doerr et al., 2020).

The estimated coefficient for the real exchange rate (REXCH) is not significant at 1% and hurts international tourism demand (Chi, 2020). This is compliant with economic theory, as fluctuations in exchange rates affect international tourism, the number of arrivals, and tourists head to the most attractive country in terms of prices

Table 3
Optimal lag selection by Akaike Information Criterion (AIC)

Lag	LogL.	LR.	FPE.	AIC.	SC.	HQ.
00	-56.91071	NA	0.000150	5.383540	5.630387	5.445622
01	83.75025	207.9336	6.83e-09	-4.673935	-3.192856*	-4.301448
02	121.3701	39.25549*	3.28e-09*	-5.771313*	-3.056001	-5.088419*

Source: Author's research

Table 4
Johansen co-integration tests results

Unrestricted co-integration rank test (trace)				
Hypothesized		Trace	0.050	
No. of CE(s)	Eigenvalue	Statistics	Critical Value	Prob.**
None *	00.902020	116.8699	69.81889	0.0000
At most 1 *	00.707532	63.44107	47.85613	0.0009
At most 2 *	00.575110	35.16487	29.79707	0.0109
At most 3	00.375399	15.47857	15.49471	0.0503
At most 4 *	00.183182	4.653786	3.841466	0.0310
The trace test reveals three co-integrating equations at the 0.05 level				
Unrestricted co-integration rank test (maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistics	Critical Value	Prob**
None *	0.902020	53.42879	33.87687	0.0001
At most 1 *	0.707532	28.27620	27.58434	0.0407
At most 2	0.575110	19.68630	21.13162	0.0786
At most 3	0.375399	10.82478	14.26460	0.1632
At most 4 *	0.183182	4.653786	3.841466	0.0310
Max-eigenvalue test shows 2 co-integrating equations at the 0.05 level				

Source: Author's calculation

regardless of the inflation policy in this country. The rise in the exchange rate leads to a decrease in foreign tourist demand, and the real exchange rate coeficient of -0.85 indicates that a decrease in the exchange rate by one unit leads to an increase in tourism arrivals by 0.85 units lagged by one period (Table 5).

The Granger causality test

The findings of the Granger causality test are shown in Table 6. We can conclude that the CPI and REXCH cause the TOURISM one-way because the null hypothesis of no causality was rejected at a 5% significance level in both cases. On the other hand, we can not confirm any causal relationship between tourism and GDP or air transport. Some other causalities are confirmed among independent variables (i.e., CPI and GDP, GDP, and AIR TRANSPORT).

Residual diagnostics

All applied methodological approaches are based on VAR specification. Thus, VAR model reliability has been examined to guarantee that the model satisfies the requirements of a good regression. The diagnostic tests are Q-statistic probabilities adjusted test, inverse roots of AR characteristic polynomial and Jarque-Bera for normal distribution. Findings in Figure 1 demonstrate that the model passed the auto-correlation test since all Q-statistics are statistically insignificant, thus, the model is well specified. On the other hand, the residuals aren't normally distributed since the Jarque-Bera statistic (Figure 2) is statistically significant, rejecting the null hypothesis of normal distribution of residuals.

To give as clear clarification as possible based on what is stated above, the lag order 2, the VAR (2nd order) model is reinstated. Ten test stationarities of the VAR model and the moduli of the reciprocal roots are shown in Figure 3, which demonstrates that the moduli of the reciprocal of each characteristic root are in the circle. Thus, it may be said, the lag- order 2 is appropriate, and the established VAR model is stable after going through the stability test.

Discussion

When comparing our results with previous studies, we primarily conclude that the real GDP, consumer price index, and real exchange rate have a long-term impact on international tourism demand. The idea that prices and the real exchange rate have a negative relationship with tourist arrivals appears to match the same results concluded by Khoshnevis Yazdi and Khanalizadeh (2016), Rafiei and Abbaspoor (2021), Tung and Thang (2022) and Tung and Cuong (2020). Alternatively, it contradicts those of Tavares and Leitao (2016).

Table 5
VECM estimation results

	Coef	Std.-Error	t-Statistics	Prob
C (1)	-1. 212104	0. 294291	-4. 118718	0. 0008
C (2)= D(TOURISM(-1)	0.394082	0.240101	1.641315	0.1202
C (3)= D(CPI(-1)	-1.90613	1.608106	-1.18755	0.0014
C (4)= D(GDP(-1)	-0.906846	1.292018	-0.701883	0.4928
C(5)= D(REXCH(-1)	-0.858978	1.564181	-0.549155	0.5905
C (6)= D(AIRTRANSPORT(-1)	0.350029	0.363475	0.963006	0.3499
C (7)=c	1.612641	0.452593	3.563113	0.0026
R2	0.541416	Mean dependent var		0.170587
Adjusted R2	0.369447	S.D. dependent var		0.584038
S.E. of regression	0.463769	Akaike info criterion		1.546929
Sum squared resid.	3.441306	Schwarz criterion		1.892515
Log-likelihood	-10.78969	Hannan-Quinn criteria		1.633843
F- statistics	3.148333	Durbin-Watson stat		1.984140
Prob (F-statistics)	0.031068			

Source: Author's calculation

Table 6

Granger causality test results

Null hypothesis	Obs	F-Statistics	Prob.
TOURISM is not caused by CPI	24	4.56266	0.0446
CPI is not caused by TOURISM		0.96493	0.3371
TOURISM is not caused by GDP	24	0.50951	0.4832
GDP is not caused by TOURISM		1.81962	0.1917
TOURISM is not caused by REXCH	24	5.50493	0.0289
REXCH is not caused by TOURISM		0.73144	0.4021
TOURISM is not caused by AIR TRANSPORT	24	0.27663	0.6044
AIR TRANSPORT is not caused by TOURISM		0.57607	0.4563
CPI is not caused by GDP	24	6.49798	0.0187
GDP is not caused by CPI		2.74189	0.1126
CPI is not caused by REXCH	24	3.48346	0.0760
REXCH is not caused by CPI		1.73987	0.2014
CPI is not caused by AIR TRANSPORT	24	0.07351	0.7889
AIR TRANSPORT is not caused by CPI		3.19445	0.0883
GDP is not caused by REXCH	24	1.70077	0.2063
REXCH is not caused by GDP		0.24749	0.6240
GDP is caused by AIR TRANSPORT	24	5.86797	0.0245
AIR TRANSPORT is not caused by GDP		2.42460	0.1344
REXCH is not caused by AIR TRANSPORT	24	2.29418	0.1448
AIR TRANSPORT is not caused by REXCH		0.58234	0.4539

Source: Author's calculation

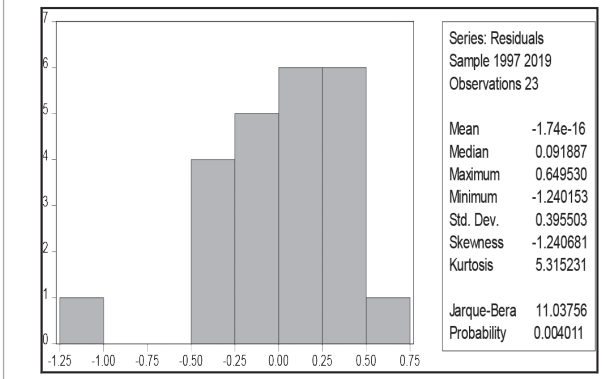
Figure 1

Q-statistics probabilities adjusted test

Auto-correlation	Partial-correlation		AC	PAC	Q-Stat	Prob*.
. | . . |	. | .. |	01	-0.009	-0.009	0.0019	0.965
. |**.. |	. |**.. |	02	0.342	0.342	3.2092	0.201
.**| . . |	.**| .. |	03	-0.272	-0.302	5.3303	0.149
. | . .|	.*| . .|	04	-0.016	-0.135	5.3381	0.254
.*| . .|	. |*. .|	05	-0.144	0.076	5.9974	0.306
. | . .|	. | . .|	06	0.050	0.036	6.0808	0.414
.*| . .|	.**| . .|	07	-0.176	-0.245	7.1957	0.409
. | . .|	.*| . .|	08	-0.050	-0.114	7.2904	0.506
.*| . .|	. | . .|	09	-0.180	-0.017	8.6255	0.473
.*| . .|	.*| . .|	10	-0.099	-0.162	9.0591	0.527
. | . .|	. | . .|	11	-0.049	-0.062	9.1721	0.606
. | . .|	. | . |	12	0.029	0.046	9.2147	0.684

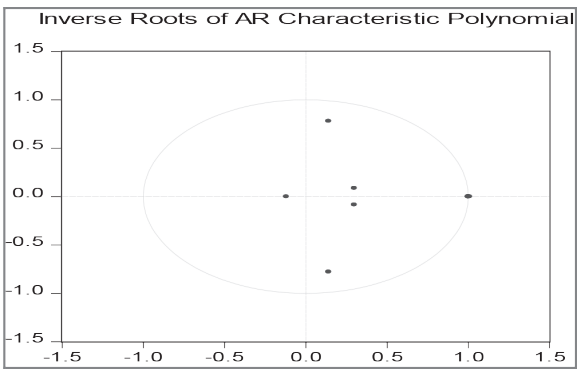
Source: Author's calculation

Figure 2
Normal distribution



Source: Author's research

Figure 3
Inverse roots of AR characteristic polynomial



Source: Author's research

One of the main findings obtained from the study is that CPI is a relevant element (0.0014), which can be understood to be flexible. Prices have a significant effect on tourism in Tunisia. Based on the chosen model, the expected estimates for the relative living costs for tourists in Tunisia are -1.90613, consistent with Baghirov's and Sarkhanov's (2023) findings.

International travel to Tunisia is notably influenced by the real exchange rate, infrastructure, political stability, and absence of violence, as pointed out by Adeola and co-authors (2018). Therefore, violence has become a risk factor for tourism in Tunisia (Arab Spring). If Tunisia has greater political stability and no violence, tourist arrivals will grow.

Conclusion and Policy Implications

The tourism industry in Tunisia represents a significant part of the country's economic development, with tourism activities generating nearly 6% of the GDP and displaying a growth rate close to that of the national economy. With receipts amounting to more than 2300 million TND (€ 1,06995) in 2001, tourism covered nearly half of the Tunisian trade deficit under the combined effect of the 2008 financial crisis and the events of September 11, 2001, after which international tourism recorded a significant decline (international arrivals - 1.3%). To illustrate further, according to statistics collected from TNTO (Tunisian National Tourist Office), tourism indicators underwent various changes between 2000 and 2001. The tourism sector led to growth that accounted for more than (+ 6.5%) of non-resident inflows.

Our research, hence, tests the determinants of tourism demand in Tunisia during the period 1997-2019 using the Co-integration test and the VECM model based on the number of incoming tourists as a dependent variable and CPI, GDP, REXCH, and AIR TRANSPORT as independent variables. The results of the study showed that the real exchange rate (REXCH) has a negative effect on international tourism demand, as the fluctuations in exchange rates affect international tourism, as well as the number of arrivals, due to tourists heading to the most desirable country in terms of prices, regardless of the inflation policy adopted in that potential destination. The increase in exchange rate leads to a decrease in international tourism demand. Herein, the reduction of the real exchange rate factor indicates an increase in the exchange rate associated with tourist arrivals.

The estimated long-term price elasticity might suggest that tourist arrivals in Tunisia could be increased by decreasing costs of living (prices). Concurrently, discovering the estimated coefficient for CPI is a positive and significant endeavor. It implies that the issue of living costs in destination countries remains essential even though a slight change in the CPI ratio may lead to decreased tourist arrivals in Tunisia. The tourists, however, are not price-sensitive regarding costs of living, despite the travel price index acting as an accurate and readily available tool.

The district with the airport evidenced more noticeable and significant increases in incoming tourists, with foreign visitors accounting for most of these increases. Based on the assessment findings, additional suggestions to policymakers and travel providers would be of great importance: The qualitative leap envisaged in Tunisia

requires sustainable demand and the inclusion of new investors, not to mention the development of private and public sector partnerships. To allow this sector to become independent and fulfill its full potential in the economic growth of Tunisia, it becomes vital to move towards a total rebranding of this industry's image concerning its local markets. Therefore, the country's image becomes crucial in deciding on a destination.

Integrating tourist sites, cultures, traditions, and national heritage reduces uncertainty and allows the native population to better understand this sector's significance. Promotional efforts are required to reestablish consumer and company confidence while creating more robust product quality assurances and certification. Comparable strategies have enabled Tunisia to offer diversified, flexible, and high-quality tourism, which has been affected very little by exogenous factors and global externalities. Future studies should focus mainly on factors such as the economy's trade openness, oil prices, marketing spending, and the willingness for tourist consumption.

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Turistično povpraševanje v Tuniziji: VECM pristop

Izvleček

Namen te raziskave je bil preučiti determinante turističnega povpraševanja v Tuniziji od leta 1995 do leta 2019 s štirimi neodvisnimi spremenljivkami: bruto domačim proizvodom, indeksom cen življenjskih potrebščin, realnim menjalnim tečajem in številom prepeljanih potnikov v zračnem prometu. V raziskavi so bili uporabljeni testi enotskih korenov, kointegracijski test in model vektorske korekcije napak (VECM) za preučitev dinamike kratkoročnih in dolgoročnih razmerij med spremenljivkami. Rezultati kažejo, da med spremenljivkami obstajajo kointegracijski odnosi; vse neodvisne spremenljivke negativno vplivajo na turistično povpraševanje, razen letalskega prevoza. Glede na dobljene rezultate bi se morali oblikovalci politik zavedati negativnega vpliva politične nestabilnosti države na obseg zunanjega turističnega povpraševanja. V tem smislu mora vlada ponovno vzpostaviti politično stabilnost, da bi turiste spodbudila k obisku Tunizije. Prihodnje študije bi morale upoštevati dejavnike, kot so trgovinska odprtost gospodarstva in cene nafte.

Ključne besede: turistična industrija, turistično povpraševanje, VECM, kointegracija, Tunizija