An Empirical Study on Tourism and Economic Growth in Greece: An Autoregressive Distributed Lag Boundary Test Approach

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Abstract: - The objective of this research is to analyze the impact of the tourism industry on the economic growth of Greece. The study employs empirical analysis and time series econometric techniques to evaluate the Tourism-Driven Growth hypothesis. Information spanning from 1995 to 2022 about the growth of tourism (TR), expenditure on tourism (TE), average expenditure on tourism per capita (PCTE), and economic growth (GDP) was utilized. Initially, the authors examined the interconnections among these variables using the Autoregressive Distributed Lag (ARDL) Bounds Test. After identifying a statistically significant cointegration relationship, the study proceeded to estimate the long-term and short-term coefficients associated with these variables. Based on the results, it appears that there is a long-term correlation between economic growth and tourism, indicating that international tourism can have a positive impact on economic expansion.

Key-Words: - Tourism, Economic growth, Tourism per capita, ARDL bounds tests, Tourist revenues, Greece, Economic development, Tourism expenditures.

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1 Introduction

Tourism makes a significant contribution to the economy of many nations, creating employment, producing cash, and driving economic progress. Tourism and economic development have been widely researched, with a growing body of literature focusing explicitly on the setting of developing nations, [1]. Tourism development has become a major corporate activity, revenue, employment, and foreign currency source for many nations. Many nations, particularly developing countries, depend on the dynamic tourist industry as the primary source of income creation, private sector growth, and infrastructure, [2], [3], [4]. Recognizing tourism's growing significance, governments, local authorities, and the private sector in many nations, [5], [6], [7], as well as the public universities, [8], have started to dedicate resources to tourist development.

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Without question, tourism is one of the most significant sectors of the Greek economy. Despite

being a huge, planned, and holiday-oriented tourist destination, Greece features various types of tourism. Many experts believe that tourism is a development instrument with many economic advantages that can be objectively quantified and utilized for further development. Official data for the next seven years show that an increase in tourist traffic may produce $16.5 billion in income and 225 thousand new employments. Furthermore, for every million extra visitors that visit our nation, GDP rises by 1%.

Tourism growth is critical to Greece's economic success since it is one of the country's most important industries and has a large beneficial influence on environmental activities. Greece's tourist business has prospered in the last ten years as a result of its attractiveness as a holiday destination and improvements to its infrastructure. During this time, inbound visitors, and travel receipts more than doubled, helping to counter the extended recessionary effect of Greece's post-debt crisis in 2010. While arrivals and the number of significant tourist sources have increased, daily expenditure remains low by worldwide standards, and demand is concentrated on heritage sites, [9], [10]. Nonetheless, Greece's dependence on tourism makes it susceptible to exogenous shocks like the recent epidemic.

Tourism and economic development have been extensively researched, especially in developing nations. Tourism provides economic benefits such as foreign currency acquisition, job creation, infrastructure development promotion, and economic growth stimulation, [11], [12], [13], [14], [15], [16], [17], [18], [19]. Furthermore, tourism often has a multiplier impact on the economy by increasing investment in adjacent industries such as transportation, hotel, and retail. Understanding the link between tourism and economic development is so crucial for governments and corporate leaders trying to maximize the tourist industry's potential advantages. Empirical research on the link between tourism and economic development has produced conflicting findings. Some studies identified a positive and statistically significant association between tourism and economic growth, while others found little or no evidence, [18], [20], [21], [22], [23], [24].

This research adds two new chapters to the existing literature. For starters, it is the first empirical study of the short- and long-term link in Greece between economic growth, tourist revenues, tourism expenditures, and tourism per capita spending. Second, to investigate the long-term connection, the research used the Autoregressive Distributed Lag (ARDL) limits test of cointegration and employs the ARDL framework to evaluate both long-term and short-term dynamics. The methodology employed in this study, including the versatile ARDL approach, can be effectively applied to diverse sectors of the national economy. By identifying sector-specific variables and adjusting the multivariate regression model accordingly, one can investigate the impact of factors like investment, government spending, or exports on economic growth. The ARDL approach facilitates the exploration of both short-term and long-term relationships between variables, providing comprehensive insights into the dynamics of different economic sectors. This approach enhances our understanding of the key drivers of economic growth, aiding policymakers and researchers in informed decision-making.

2 Literature Review

In recent decades, both rich and developing nations have collaborated extensively on economic growth and tourist income. With tourism on the rise in many countries, policymakers are turning to the causal relationship between economic growth and tourist earnings, [14], [25], [26], [27].

The concept of tourist-led growth, grounded in extensive research, postulates the enduring impact of tourism on economic development. This theory posits tourism as a potent growth engine, wielding the capacity to contribute significantly to GDP growth, the creation of employment opportunities, and the influx of foreign currency revenues. In this symbiotic relationship, economic growth reciprocally influences tourism development, fostering a positive feedback loop. This influence is evident in the development of crucial elements like transportation, information and communication technology, and the establishment of essential facilities and infrastructure such as e-money systems, hotels, restaurants, and various entertainment services and amenities. The interconnected nature of economic growth and tourism underscores the reciprocal benefits each confers upon the other, creating a synergistic dynamic that propels sustained development and prosperity.

GDP is a commonly used measure of a country's economic performance and is often used as an indication of a country's overall degree of development. Several indicators are often used to assess the link between economic growth and tourist development. These variables include tourism income, [14], [28], [29], [30], [31], [32],

[33], [34], tourism expenditures and average tourism expenditures per capita, tourism arrivals, [19], [29], tourism sector employment, and foreign direct investment. In research and policy analysis, these variables are often used to quantify and evaluate the link between economic growth and tourist development. Researchers and policymakers may better understand the influence of tourism on economic growth and design effective policies to promote sustainable tourism development by investigating these factors and their interrelationships, [35], [36], [37]. [38], also argue for the sustainable recovery of tourism and hospitality organizations, during and after the recent pandemic, [39], [40].

Various time series and panel data analysis-based research approaches have been used; however experimental investigations have shown conflicting or inconsistent findings in favor of the tourism-driven economic development concept. Several researchers have used Granger causality tests and time-series data analysis to investigate the link between tourism and economic growth. [22], [41], [42], [43], [44], [45], are just a few of the studies that give data to support the tourism-led growth concept.

[46], [47], [48], on the other hand, support the feedback hypothesis, although, [49], [50], [51], do not give evidence of a link between the two variables. Other empirical research, however, has used panel or cross-sectional data analysis to study the relationship between tourist development and economic growth. [42], [48], [52], [53], [54], [55], [56], [57], [58], [59], are some of these investigations. These research conclusions, however, are ambiguous, with inconsistent results regarding the association between tourism and economic growth.

Tourism has grown rapidly and has emerged as a substantial and economically competitive industry, [2], [7], [60], [61], [62], [63], [64]. Aside from its direct consequences, tourism has had a hugely beneficial indirect influence on economic advancement by expanding market possibilities, raising living standards, boosting government revenue via income and taxes, and even extending the production of products and services. Tourism is now an important component of the economies of both developed and developing countries, [40], [65], [66], [67].

3 Data and Model Specifications

Due to a shortage of data availability in The World repository's data repository, we used a time series of 28 annual observations from 1995 to 2022. In our model, this time series should represent both short-term and long-term correlations between tourist growth (TR), tourism expenditure (TE), average per capita tourism expenditure (PCTE), and economic growth (GDP). All data sets were acquired from the World Development Indicators and were measured in current USD.

This study employed a multivariate regression model to explore the connection between dependent and independent variables and can be formulated as follows:

$$Economicgrowth = f(PCTE_t, TE_t, TR_t) \quad (1)$$

The above equation tries to explain the variance in economic development as measured by GDP based on several independent factors. These variables include Average Per Capita Tourism Expenditure (LPCTE), International Tourism Expenditures (TE), and International Tourism Receipts (TR).

According to the model, the following is one method in which the independent variables affect the dependent variable, which is GDP:

The LPCTE variable, which is an independent variable, stands for the typical amount of money that each visitor to Greece spends while they are there. Because expenditures on tourism contribute to the economy, it is reasonable to anticipate that an increase in the average amount spent by tourists per person would lead to a rise in GDP.

The expenditures of international outbound tourists from Greece in other countries are represented by the independent variable TE. This includes payments made to foreign carriers for international transportation. These expenditures include those by residents traveling abroad. It is anticipated that increased spending from foreign tourism would result in either an increase or a decrease in GDP. The amount of money spent on tourism may have both a good and a negative effect on economic expansion. Careful planning and management are required to guarantee that tourism will contribute to the expansion of the economy in a sustainable manner.

The total revenue TR (independent variable) shows the amount of money spent by foreign tourists who traveled to the United States, which includes the amount paid to domestic carriers for overseas travel. These receipts include any other kind of prepayment that was made for goods or services that were re-received in the country of destination. It is expected that higher international tourism receipts will result in a higher GDP, as it

indicates the amount of money that Greece earns from tourism.

The contributions of each independent variable to the overall change in GDP are represented by the coefficients a0, a1, a2, and a3, respectively. A positive coefficient for LPCTE (a1), for instance, would imply that a rise in average per capita expenditures on tourism in Greece is connected with an increase in GDP.

The presence of an error term (denoted as et in the equation) indicates the proportion of GDP variation that cannot be explained by the independent variables. This difference may be due to factors not considered during model development, such as changes in macroeconomic conditions or external factors affecting tourism.

The data indicates that tourism plays a crucial role in fostering economic development in Greece, as demonstrated by its substantial influence on the country's GDP. Equation (2) represents the logarithmic conversion of the initial multiple regression model (1), featuring each variable in its logarithmic representation. The long-run model can be articulated as follows:

$$LGDP_t = a_0 + a_1 LPCTE_t + a_2 LTE_t + a_3 LTR_t + \varepsilon_t \quad (2)$$

In regression analysis, logarithmic transformations are employed to enhance the modeling of relationships between variables. Specifically, in Equation (2), the dependent variable, GDP, and the independent variables, LPCTE, TE, and TR, are all represented in logarithmic form (LGDP, LPCTE, LTE, and LTR, respectively). This logarithmic transformation serves to linearize the relationship, simplifying the application of linear regression techniques for the analysis and interpretation of the data.

4 Methodology

4.1 ARDL Approach

[68], devised a method to explore long- and short-term relationships in time series data using the Autoregressive Distributed Lag (ARDL) model. This involves estimating the ARDL model with lag values for both dependent and independent variables. Criteria like the Akaike Information Criterion (AIC) guide the selection of lag values. The ARDL model is then used to constrain lagged variable coefficients, aiming to validate long-term relationships and identify connections between variables. [69], boundary test checks if the coefficient of the lagging variable, crucial for long-term associations, falls within predefined upper and lower bounds. Acceptance of the alternative hypothesis (indicating a long-run association) and rejection of the null hypothesis (implying no long-run association) depend on this evaluation. By including lagged changes of the dependent and independent variables in the model; the ARDL method also enables the estimate of short-run dynamics. This is accomplished via the use of lags. This approach is less restrictive, and as a result, it offers more flexibility. As an alternative to the conventional integration tests, it is becoming more popular. Passing the ARDL test does not need all of the variables in the model to be of the I(0) or I(1) type. To investigate the dynamic nature of the connection that exists among economic growth, tourist revenues, and tourist expenditures, this methodology was used.

Because it is not necessary for the verification of this approach that the investigated time series be integrated of the same degree, the most visible difference and at the same time the greatest benefit of this method is that it is not needed that the inspected time series be integrated of the same degree, as long as they are of zero or first degree. Also, ARDL is the most statistically significant method compared to previous ones for determining whether or not a long-run association exists in small samples, [70]. This is because ARDL considers the likelihood of the relationship existing. Last but not least, this technique is superior to others in that it makes use of an error correction model (ECM) to manage the cointegration of the variables in the short term without discarding information about the long term.

In this part of the article, both long-run and short-run models are discussed, respectively. The following equation provides a picture of the long-run model that may be specified according to its parameters:

$$\Delta LGDP_t = \beta_0 + \sum_{i=1}^{n} \beta_{1i} \Delta LGDP_{t-i} + \sum_{i=1}^{m} \beta_{2i} \Delta LPTE_{t-i} + \sum_{i=1}^{c} \beta_{3i} \Delta LTE_{t-i} + + \sum_{i=1}^{g} \beta_{3i} \Delta LTR_{t-i} + u_t \quad (3)$$

where Δ is the difference operator n, m, c and g are the lag order, and u_t is the error term. Similarly, the demonstration of the short-run analysis of the study variable is drawn according to the error correction model (ECM) of the ARDL and is specified as follows.

$$\Delta LGDP_t = \theta_0 + \sum_{i=1}^{s} \theta_{1i}\, \Delta LGDP_{t-i} + \sum_{i=1}^{j} \theta_{2i}\, \Delta LPTE_{t-i} + \sum_{i=1}^{f} \theta_{3i}\, \Delta LTE_{t-i} + + \sum_{i=1}^{o} \theta_{3i}\, \Delta LTR_{t-i} + \alpha ECM_{t-1} + u_t \quad (4)$$

The short-run analysis among study variables is shown in equation (4) by the ECM model, and s, j, f, and show the lags order.

5 Results

The descriptive statistics of 28 observations from the time series variables are shown in Table 1. The normal distribution of the series has been confirmed by the Jarque-Bera test, indicating that the variables have a mean of zero and a constant variance.

The descriptive statistics suggest that the data is normally distributed with relatively small ranges and standard deviations, indicating that the data points are close to the mean values. The negative skewness values suggest that the data is slightly skewed to the left, but the Jarque-Bera test confirms that the data is normally distributed. The mean LGDP is 26.05490, indicating the central tendency. The distribution is slightly positively skewed (0.014679), suggesting a longer right tail. Kurtosis (2.015732) implies a moderately peaked distribution. The mean LPCTE is 6.587469, representing the average percentage of total employment. Negative skewness (-0.917193) indicates a longer left tail. Kurtosis (3.297029) suggests a more peaked distribution. The mean LTE is 21.82108, signifying the average total revenue. Negative skewness (-0.881773) suggests a longer left tail. Kurtosis (2.521170) indicates a moderately peaked distribution. The mean LTR is 23.18179, representing another measure of total revenue. Negative skewness (-0.996425) implies a longer left tail. Kurtosis (2.852121) suggests a moderately peaked distribution. Tests the assumption of normality; lower probabilities (P-Values) indicate departures from normal distribution. This nuanced analysis provides specific insights into each variable's characteristics, aiding in a more targeted understanding of the data's statistical properties.

Table 1. Descriptive statistical analysis

	LGDP	LPCTE	LTE	LTR
Mean	26.05490	6.587469	21.82108	23.18179
Median	26.06381	6.643432	21.94880	23.37480
Maximum	26.59794	7.007601	22.31089	23.85889
Minimum	25.59432	5.880533	21.05688	22.04742
Std. Dev.	0.293199	0.296227	0.373492	0.543723
Skewness	0.014679	-0.917193	-0.881773	-0.996425
Kurtosis	2.015732	3.297029	2.521170	2.852121
Jarque-Bera	1.131252	4.028728	3.895935	4.658877
Probability	0.568004	0.133405	0.142564	0.097350
Sum	729.5372	184.4491	610.9901	649.0900
Sum Sq. Dev.	2.321072	2.369267	3.766407	7.982124
Observations	28	28	28	28

5.1 ADF Unit Root Test Result

The unit root tests help identify the order of integration for the time series variables, providing essential information for the subsequent application of the ARDL bounds test in the analysis of cointegration relationships. The time series does not need to be rigorously integrated at I(0) or I(1) to pass the ARDL bounds test, but it cannot be stationary at orders bigger than I(1) otherwise the results would be skewed. Therefore, before doing the cointegration test, the unit root test must be applied to all-time series. [71] and ADF-GLS tests that take into consideration endogenous structural breaks in the data are utilized in this research to identify the order of integration. Table 2 displays the outcomes of the unit root tests for the various time series.

For four variables—LGDP, LPCTE, LTE, and LTR—the results of the Augmented Dickey-Fuller (ADF) and DF-GLS unit root tests are shown in Table 2 The test is used to detect whether or not a time series is stationary. In conclusion, LPCTE and LTR have unit roots in levels but become stationary after taking the first difference, while LGDP and LTE are stationary in levels. The ARDL model may be used since it exhibits a mixed order of integration between variables (I(0) or I(1)).

The unit root tests were applied to the time series variables, as presented in Table 2. Gross Domestic Product (LGDP) and Employment in the Labor Force (LTE) were found to be stationary at the level, with significance probabilities of 0.0047** and 0.0084*, respectively. In contrast, Percentage of Total Employment in the Labor Force (LPCTE) and Total Revenue (LTR) were initially non-stationary at the level but exhibited stationarity after taking the first difference, supported by t-Statistics of -5.039689 (probability 0.0004*) and -4.838175 (probability 0.0007*), respectively. The mixed order of integration (I(0) or I(1)) among the variables suggests the potential application of the Autoregressive Distributed Lag (ARDL) model for subsequent analysis. These results provide valuable insights into the behavior of the time series data, laying the foundation for further econometric modeling and cointegration analysis.

5.2 Cointegration Test

After identifying the order of integration, the ARDL joint test technique was utilized in this work to assess the long-run connection between GDP, tourist expenditures, the average amount tourists spend in Greece, and tourist receipts. To test for the existence of a level connection between LGDP and the explanatory variables, the F-Bounds and t-Bounds tests are utilized. The F-Bounds test is used to test the null hypothesis of no levels connection, while the t-Bounds test is used to test the null hypothesis of no cointegration. If the estimated F-statistic is less than the lower limit, the null hypothesis of no cointegration is accepted; if it is more than the upper bound, the null hypothesis is rejected. Table 3 summarizes the findings.

Table 2. Descriptive statistical analysis

Variables		**ADF**		**ADF-GLS**	
		t-Statistic	**Probability**	**t-Statistic**	**Probability**
LGDP	Level	-4.113718	0.0047**	-4.648998	0.0281**
	1st difference				
LPCTE	Level	-2.224772	0.2026	-3.902767	0.1924
	1st difference	-5.039689	0.0004*	-5.396091	<0.01*
LTE	Level	-3.771505	0.0084*	-6.698295	<0.01*
	1st difference				
LTR	Level	-2.224269	0.2028	-6.995523	<0.01*
	1st difference	-4.838175	0.0007*		

**, * * represents 1, and 5% significance level*

Table 3. Results of F-Bounds and T-Bounds testing

F-Bounds Test	**Value**	**Significance**	**F-Bounds Test**	**Value**
F-statistic	4.691272	10%	3.47	4.45
		5%	4.01	5.07
		2.5%	4.52	5.52
		1%	5.17	6.36
t-Bounds Test				
t-statistic	-3.858037	10%	-3.13	-3.84
		5%	-3.41	-4.16
		2.5%	-3.65	-4.42
		1%	-3.96	-4.73

The F-bounds and t-bounds tests are used to check for the existence of a long-run relationship between the variables. Both tests reject the null hypothesis of no long-run relationship with a significance level of 10%, indicating that there is a long-run relationship between LGDP and the explanatory variables.

5.3 Long-Run Analysis Results

Long-term estimates are presented in Table 4. The output provided comes from an estimated ARDL (2,1,4,4) model according to the Akaike information criterion. The levels equation shows the long-run relationship between LGDP and the explanatory variables (LPCTE, LTE, and LTR). The coefficients indicate that LGDP is positively related to LPCTE and LTR, and negatively related to LTE. This implies that an increase in the amount of money that tourists spend in Greece (LPCTE) and the amount of money received by Greece from international tourists (LTR) leads to an increase in GDP, while an increase in tourism expenditure in (LTE) leads to a decrease in GDP.

The error correction term (EC) depicts the short-run process of adjusting to departures from long-run equilibrium. The EC coefficient is negative, suggesting that the adjustment is aimed at achieving long-run equilibrium. The LPCTE coefficient is 0.626089, which implies that a 1% rise in average per capita tourist spending is connected with a 0.626089% increase in economic growth, and this relationship is statistically significant. This implies that the more money visitors spend in Greece, the larger the country's economic effect. Holding other factors equal, LTE has a negative coefficient of -0.5557, suggesting that an increase of one percent in the total amount of tourism expenditures from Greece is connected with a -0.5557% decline in domestic economic growth. LTE has a t-statistic of -3.579, showing that it is statistically significant at the 1% level. The LTR coefficient is 0.986709, which implies that a 1% rise in tourist growth is connected with a 0.986709% increase in real GDP growth rate and is statistically significant at the 0.01 level. This implies that the bigger the amount of money received by Greece from overseas visitors, the greater the influence on the country's economic development. Finally, the estimated error term for the regression equation is EC = LGDP - (0.6261LPCTE -0.5557LTE + 0.9867*LTR). It indicates the difference between the actual and expected LGDP values based on the three independent variables.

The results indicate that international tourism expenditures have a negative impact on economic growth. When Greek tourists spend money abroad, it represents a leakage of revenue from the domestic economy. If a significant amount of money is spent outside of Greece, it may result in less money circulating within the domestic economy, leading to reduced local business revenues, employment opportunities, and tax revenues. On the other hand, tourism receipts and average per capita tourism expenditure represent the money spent by international tourists in a destination country and positively the economic growth. This can generate significant revenue for the local economy, as tourists spend money on accommodation, meals, transportation, shopping, and other goods and services.

5.4 Short-Run Analysis Results

An error correction model (ECM) should be used to determine the presence of a cointegration connection between variables. The system's short-term dynamics and its coefficients, describe the rate at which the shocks to the system are adjusted to achieve equilibrium. The resultant short-run dynamic growth equation is shown in Table 5. The model includes lagged variables of the dependent and independent variables to account for potential time lags. C (constant) has a statistically significant positive coefficient of 18.72544.

Table 4. Log-run estimated Coefficients (Dependent variable: LGDP).

Variables	Coefficient	Std. Error	t-statistic	Prob.
LPCTE	0.626089	0.120190	5.209173	0.0008*
LTE	-0.555671	0.155256	-3.579052	0.0072*
LTR	0.986709	0.092728	10.64086	0.0000*
EC = LGDP - (0.6261*LPCTE -0.5557*LTE + 0.9867*LTR)				

Table 5. Short-run dynamic relationship results of ARDL-ECM.

Variables	Coefficient	Std. Error	t-statistic	Prob.
C	18.72544	3.682113	5.085517	0.0009*
@TREND	-0.057635	0.011442	-5.037326	0.0010*
D(LGDP(-1))	0.598348	0.228491	2.618698	0.0307**
D(LPCTE)	0.285737	0.200400	1.425833	0.1917
D(LTE)	-0.032263	0.066839	-0.482697	0.6422
D(LTE(-1))	0.801516	0.204235	3.924470	0.0044*
D(LTE(-2))	0.545798	0.144970	3.764912	0.0055*
D(LTE(-3))	0.406224	0.134129	3.028610	0.0163**
D(LTR)	0.144129	0.070040	2.057812	0.0736***
D(LTR(-1))	-1.527239	0.320980	-4.758058	0.0014*
D(LTR(-2))	-1.111478	0.247770	-4.485924	0.0020*
D(LTR(-3))	-0.670794	0.194052	-3.456779	0.0086*
CointEq(-1)*	-1.597212	0.314439	-5.079567	0.0010*

R-squared	0.903663	Mean dependent var	0.017914
Adjusted R-squared	0.798568	S.D. dependent var	0.109569
S.E. of regression	0.049176	Akaike info criterion	-2.883653
Sum squared resid	0.026601	Schwarz criterion	-2.245541
Log-likelihood	47.60384	Hannan-Quinn criter.	-2.714362
F-statistic	8.598525	Durbin-Watson stat	2.960751
Prob(F-statistic)	0.000581		

*Note: * significant at 1%; **significant at 5%; ***significant at 10%.*

This implies that there is a long-run equilibrium link between LGDP and the model's independent variables, which may be accounted for by the error correction factor. @TREND (trend) has a -0.057635 coefficient, which is statistically significant. This shows that the LGDP is declining over time. The positive coefficient of D(LPCTE) is 0.285737, although it is not statistically significant. The negative coefficient of D(LTE) is -0.032263, although it is not statistically significant at the 5% level. This suggests that a variation in TE exerts a detrimental impact on LGDP, although the observed effect is not statistically significant. The positive coefficients for D(LTE(-1)), D(LTE(-2), and D(LTE(-3)) are 0.801516, 0.545798, and 0.406224, respectivelyAt the 1% and 5% significance levels, all three variables exhibit statistical significance. This indicates that adjustments in TE from the preceding three periods positively impact LGDP in the current period. The statistically significant coefficient for D(LTR) is 0.144129 at the 10% level, suggesting that the alteration in TR has a positive impact on LGDP, albeit without statistical significance. The negative coefficients of D(LTR(-1)), D(LTR(-2), and D(LTR(-3)) are -1.527239, -1.111478, and -0.670794, respectively. All three variables demonstrate statistical significance at the 1% level. Alterations in TR over the preceding three periods adversely affect LGDP in the current period.

In general, the model suggests that adjustments in TE over the preceding three periods positively impact the current LGDP, while changes in TR from the previous three periods have a negative effect on the present LGDP. The findings of this research show that tourism may play an important role in encouraging economic growth, emphasizing the need for policymakers to identify and capitalize on this potential for long-term economic development.

5.5 Diagnostic and Stability Tests

Table 6 displays the results of the diagnostic and stability tests. The CUSUM and CUSUM Square tests indicate that the long-run and short-run parameters are stable, with all values falling within critical boundaries at a significance level of 5%.

Table 6. Short-run dynamic relationship results of ARDL-ECM.

Test Statistics (LM version)	Statistics (p values)
Serial correlation	1.035260 (0.3526)
Heteroscedasticity	6.847981 (0.9617)
CUSUM	stable
CUSUM Square	stable

Figure 1 and Figure 2 provide a graphical representation of the CUSUM and CUSUM Square tests, respectively.

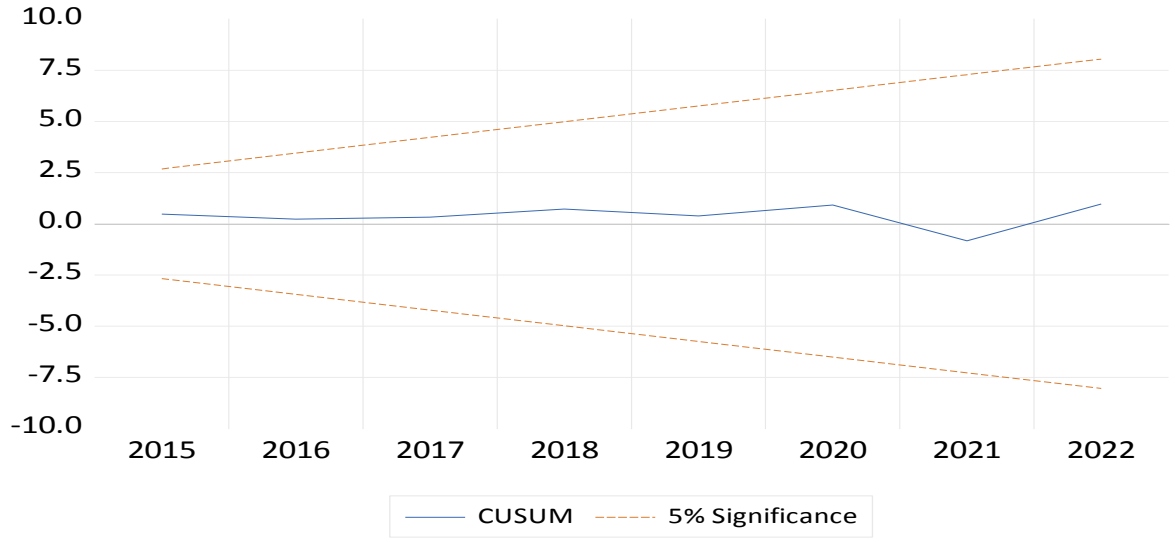

Fig. 1: Plot of CUSUM Test

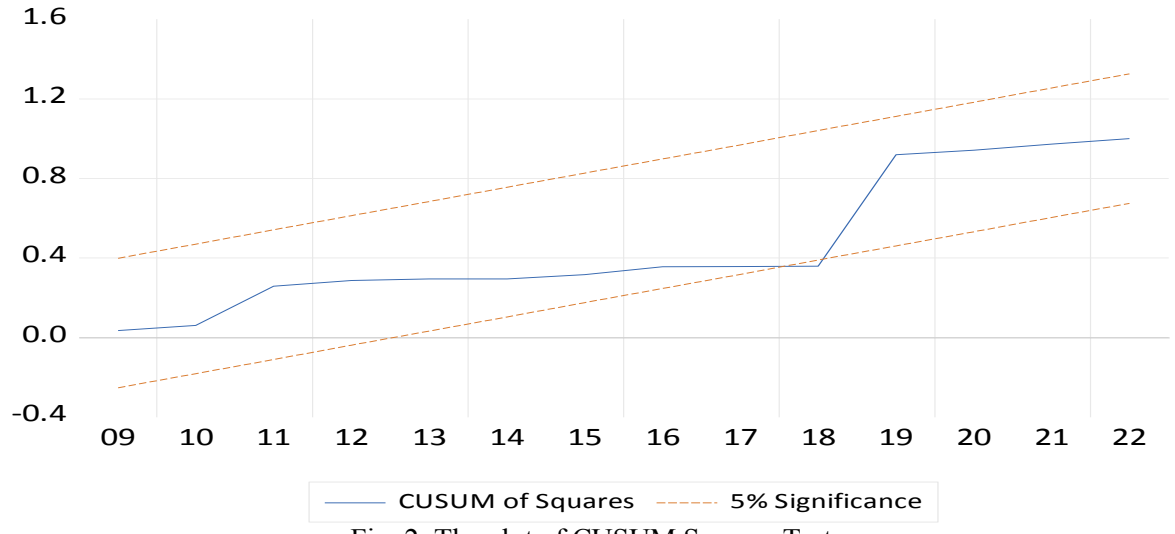

Fig. 2: The plot of CUSUM Squares Test

6 Discussion and Conclusion

6.1 Conclusions

Economic growth is closely related to tourism receipts, tourism expenditures, and average tourism expenditures per capita, as indicated by significant correlations. The data used in this study were found to be significant at zero and first-order differences after unit root tests were conducted. Cointegration tests were then conducted, which revealed the existence of short- and long-term relationships between endogenous and exogenous variables. This suggests that the variables are connected in the long run. Overall, the results highlight the strong relationship between economic growth and various tourism-related factors. Furthermore, the results

suggest that there are both short-and long-term relationships among the variables studied. This indicates that changes in tourism receipts, tourism expenditures, and average tourism expenditures per capita may have a lasting impact on economic growth.

Long-term study shows that international tourist expenditure per capita and tourism earnings boost economic development. According to the findings of this research, the Greek government may need to pay more attention to the tourism industry, enhance it, and implement better regulations to attract more international visitors. Tourism generates significant revenue for the national economy while also employing a large number of people. More investment in tourism resources is required to attract more local and international visitors.

In light of recent challenges faced by the national economy, this study assumes added significance. The correlations identified between economic growth and key tourism-related factors, such as tourism receipts, expenditures, and per capita spending, become even more pertinent in the context of recent economic adversities. The unit root tests, significant at zero and first-order differences, attest to the resilience of these relationships even amid contemporary economic challenges.

Cointegration tests reveal enduring links between endogenous and exogenous variables, suggesting that despite recent economic turmoil, the intertwined nature of these factors persists in both the short and long term. This underscores the adaptability of the tourism sector and its capacity to influence economic growth consistently.

In addressing recent economic challenges, this study underscores the pivotal role of international tourist spending per capita and tourism earnings in fostering economic development. The findings underscore the necessity for decisive government action, including the revitalization of the tourism sector, strategic initiatives, and regulatory reviews to attract more foreign visitors. Despite ongoing domestic economic difficulties, the study showcases the tourism sector's resilience, advocating for targeted investments to enhance its influence. Policymakers can utilize insights from the study to address economic concerns and position the tourism industry as a vital driver of economic recovery, strategically positioning the country for resurgence.

6.2 Theoretical Implications

The tourism-led growth hypothesis, which proposes that tourism can significantly contribute to economic growth, is supported by this research. As a result, the study suggests investing resources into tourism development to promote a country's long-term growth and maximize subsequent multiplier effects. This research contributes novel aspects to the current literature. It is the empirical examination of the association between economic growth, tourist revenues, tourism expenditures, and tourism per capita spending in Greece, in both the short and long term. Furthermore, to analyze the long-term relationship, the research employs the Autoregressive Distributed Lag (ARDL) limits test of cointegration and uses the ARDL framework to assess both long- and short-term dynamics. To promote a country's long-term growth and maximize subsequent multiplier effects, the study suggests investing resources into tourism development.

6.3 Practical Implications

The tourist business is now the most rapidly expanding sector of the Greek economy, with good worldwide performance. Tourism makes an essential contribution to regional and local socioeconomic development. Tourism may therefore operate as a driver of economic growth in Greece, increasing earnings, decreasing unemployment, and raising inhabitants' quality of life. This research was conducted to explore and assess the contribution of tourism to Greece's economic growth.

The findings of the study corroborate the short- and long-term relationship between tourist development and the country's economic growth as measured by GDP. To preserve or enhance the country's GDP, focus should be directed not just on preserving and increasing tourist earnings, but also on increasing per capita spending. This necessitates the urgent development of strategies to increase both the quality and breadth of services provided, as well as incentives or motivating mechanisms for visitors to devote a greater portion of their spending to local and other services in the nation. To enhance a satisfactory level of service quality, personnel involved in tourism must be educated and trained to boost productivity and create a competitive edge. Tourism may help policymakers create economic development by creating regional employment possibilities, enabling foreign exchange, and supporting the transportation, food, and accommodation industries, [6], [72], [73], [74].

Furthermore, authorities may use tourism to reduce regional economic gaps, allowing revenue to flow from rich to underdeveloped areas, [43], [52], [62], [75].

The thriving tourist industry stands as the fastest-growing sector in the Greek economy, contributing significantly to regional and local socioeconomic development. This research emphasizes the enduring link between tourist development and overall economic growth, measured by GDP. To boost and sustain Greece's GDP, policymakers must not only focus on preserving tourist earnings but also on increasing per capita spending. Urgent strategies are needed to enhance service quality, encourage diverse spending, and invest in personnel training. Tourism catalyzes economic development, offering opportunities for regional employment, foreign exchange, and support for related industries, [76], [77]. Additionally, it can address regional economic gaps by redistributing revenue from affluent to underdeveloped areas. These insights highlight tourism's pivotal role in fostering inclusive and balanced economic growth in Greece, [78], [79], [80].

6.4 Limitations and Future Research

The analysis was limited to 28 years due to a lack of sufficient data. In future studies, it would be beneficial to reassess the influence of tourism on economic growth over longer periods. Furthermore, it's crucial to explore the nonlinear effects of independent factors on economic development in upcoming research.

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References:

[1] Blake, A.; Sinclair, M.T.; Soria, J.A.C. Tourism Productivity. Evidence from the United Kingdom. *Ann. Tour. Res.* 2006, *33*, 1099–1120, doi:10.1016/J.ANNALS.2006.06.001. CrossRef

[2] Comerio, N.; Strozzi, F. Tourism and Its Economic Impact: A Literature Review Using Bibliometric Tools. *Tour. Econ.* 2019, *25*, 109–131, doi:10.1177/1354816618793762. CrossRef

[3] Nunkoo, R.; Seetanah, B.; Jaffur, Z.R.K.; Moraghen, P.G.W.; Sannassee, R.V. Tourism and Economic Growth: A Meta-Regression Analysis. *J. Travel Res.* 2020, *59*, 404–423, doi:10.1177/0047287519844833. CrossRef

[4] Shahbaz, M.; Shabbir, M.S.; Butt, M.S. Effect of Financial Development on Agricultural Growth in Pakistan: New Extensions from Bounds Test to Level Relationships and Granger Causality Tests. *Int. J. Soc. Econ.* 2013, *40*, 707–728, doi:10.1108/IJSE-01-2012-0002. CrossRef

[5] Bianchi, C. Exploring the Attractiveness of Chile as a Vacation Destination for International Tourists. *Tour. Anal.* 2018, *23*, 351–364, doi:10.3727/108354218X15305418666977. CrossRef

[6] Joppe, M. Sustainable Community Tourism Development Revisited. *Tour. Manag.* 1996, *17*, 475–479, doi:10.1016/S0261-5177(96)00065-9. CrossRef

[7] Karakitsiou, A.; Mavrommati, A. Machine Learning Methods in Tourism Demand Forecasting: Some Evidence from Greece. *MIBES Trans.* 2017, *11*, 92–105. CrossRef

[8] Boğan, E.; Çalışkan, C.; Karatepe, O.M.; Rezapouraghdam, H. An Investigation of the Selected Antecedents and Consequences of Work Engagement among Hospitality and Tourism Academicians. *J. Hosp. Tour. Insights* 2023, doi:10.1108/JHTI-05-2022-0190. CrossRef

[9] OECD OECD-Tourism-Trends-Policies 2020-Highlights-ENG.Pdf. 2020. CrossRef

[10] OECD Rebuilding Tourism for the Future: COVID-19 Policy Responses and Recovery. *OECD Tour. Pap.* 2020, *2020*, 1–8. CrossRef

[11] Andriotis, K. Scale of Hospitality Firms and Local Economic Development—Evidence from Crete. *Tour. Manag.* 2002, *23*, 333–341, doi:10.1016/S0261-5177(01)00094-2. CrossRef

[12] Avci, U.; Madanoglu, M.; Okumus, F. Strategic Orientation and Performance of Tourism Firms: Evidence from a Developing Country. *Tour. Manag.* 2011, *32*, 147–157, doi:10.1016/J.TOURMAN.2010.01.017. CrossRef

[13] Bassil, C.; Hamadeh, M.; Samara, N. The Tourism Led Growth Hypothesis: The

Lebanese Case. *Tour. Rev.* 2015, *70*, 43–55, doi:10.1108/TR-05-2014-0022. CrossRef

[14] Brida, J.G.; Cortes-Jimenez, I.; Pulina, M. Has the Tourism-Led Growth Hypothesis Been Validated? A Literature Review. *Curr. Issues Tour.* 2016, *19*, 394–430, doi:10.1080/13683500.2013.868414. CrossRef

[15] Grasso, F.; Schilirò, D. Tourism, Economic Growth and Sustainability in the Mediterranean Region. *Tour. Mediterr. Sea* 2021, 129–142, doi:10.1108/978-1-80043-900-920211011. CrossRef

[16] Lee, C.C.; Chang, C.P. Tourism Development and Economic Growth: A Closer Look at Panels. *Tour. Manag.* 2008, *29*, 180–192, doi:10.1016/J.TOURMAN.2007.02.013. CrossRef

[17] Croes, R.R. A Paradigm Shift to a New Strategy for Small Island Economies: Embracing Demand Side Economics for Value Enhancement and Long Term Economic Stability. *Tour. Manag.* 2006, *27*, 453–465, doi:10.1016/j.tourman.2004.12.003. CrossRef

[18] Mavrommati, A.; Karakitsiou, A.; Kourgiantakis, M. Regional Efficiency Evaluation by Input-Oriented Data Envelopment Analysis of Hotel and Restaurant Sector.; 2020; pp. 2041–2058. CrossRef

[19] Mavrommati, A.; Pendaraki, K.; Kontogeorgos, A.; Chatzitheodoridis, F. A Panel Data Model of International Tourism Demand for Greece. *Deturope* 2021, *13*, 142–157, doi:10.32725/det.2021.024. CrossRef

[20] Copeland, B.R. Tourism, Welfare and De-Industrialization in a Small Open Economy. *Economica* 1991, *58*, 515, doi:10.2307/2554696. CrossRef

[21] Hazari, B.R.; Nowak, J.J.; Sahli, M.; Zdravevski, D. Tourism and Regional Immiserization. *Pacific Econ. Rev.* 2003, *8*, 269–278, doi:10.1111/J.1468-0106.2003.00227.X. CrossRef

[22] Tang, C.F.; Abosedra, S. Does Tourism Expansion Effectively Spur Economic Growth in Morocco and Tunisia? Evidence from Time Series and Panel Data. *J. Policy Res. Tour. Leis. Events* 2016, *8*, 127–145, doi:10.1080/19407963.2015.1113980. CrossRef

[23] Brida, J.G.; Risso, W.A.; Such-Devesa, M.J.; Zapata-Aguirre, S. The Tourism-Led Growth Hypothesis: Empirical Evidence from Colombia. *Tourismos* 2009, *4*, 13–27. CrossRef

[24] Yu-Chi, S.; Lin, H.-P. Causality Relationship between Tourism, Foreign Direct Investment and Economic Growth in Taiwan. *Asian J. Econ. Model.* 2018, *6*, 287–293, doi:10.18488/JOURNAL.8.2018.63.287.293. CrossRef

[25] Sokhanvar, A.; Çiftçioğlu, S.; Javid, E. Another Look at Tourism- Economic Development Nexus. *Tour. Manag. Perspect.* 2018, *26*, 97–106, doi:10.1016/J.TMP.2018.03.002. CrossRef

[26] Zuo, B.; Huang, S. A Structural Change and Productivity Perspective of Tourism's Contribution to Economic Growth: The Case of Zhangjiajie in China. *J. Travel Res.* 2020, *59*, 465–476, doi:10.1177/0047287519841720. CrossRef

[27] Sumner, A. Is Foreign Direct Investment Good for the Poor? A Review and Stocktake. *Dev. Pract.* 2005, *15*, 269–285, doi:10.1080/09614520500076183. CrossRef

[28] 28. F. De; Agdal, M. V; Agdal, F.D.R.; Institut, A.M. The Determinants of Tourism Demand: The Case of Morocco. *Int. Res. J. Financ. Econ.* 2012, *92*, 163–175. CrossRef

[29] Can, M.; Gozgor, G. Revisiting the Tourism-Growth Nexus: Evidence from a New Index for the Market Diversification of Tourist Arrivals. *Curr. Issues Tour.* 2018, *21*, 1157–1170, doi:10.1080/13683500.2016.1268103. CrossRef

[30] Dogru, T.; Isik, C.; Sirakaya-Turk, E. The Balance of Trade and Exchange Rates: Theory and Contemporary Evidence from Tourism. *Tour. Manag.* 2019, *74*, 12–23, doi:10.1016/j.tourman.2019.01.014. CrossRef

[31] Isik, C.; Dogru, T.; Turk, E.S. A Nexus of Linear and Non-Linear Relationships between Tourism Demand, Renewable Energy Consumption, and Economic Growth: Theory and Evidence. *Int. J. Tour. Res.* 2018, *20*, 38–49, doi:10.1002/jtr.2151. CrossRef

[32] Kyophilavong, P.; Gallup, J.L.; Charoenrat, T.; Nozaki, K. Testing Tourism-Led Growth Hypothesis in Laos? *Tour. Rev.* 2018, *73*, 242–251, doi:10.1108/TR-03-2017-0034. CrossRef

[33] Yılancı, V.; Kırca, M. Testing the Relationship between Employment and Tourism: A Fresh Evidence from the ARDL Bounds Test with Sharp and Smooth Breaks. *J. Hosp. Tour. Insights* 2023, doi:10.1108/JHTI-10-2022-0509. CrossRef

[34] Işık, C.; Sirakaya-Turk, E.; Ongan, S. Testing the Efficacy of the Economic Policy Uncertainty Index on Tourism Demand in USMCA: Theory and Evidence. *Tour. Econ.* 2020, *26*, 1344–1357, doi:10.1177/1354816619888346. CrossRef

[35] Momeni, K.; Janati, A.; Imani, A.; Khodayari-Zarnaq, R. Barriers to the Development of Medical Tourism in East Azerbaijan Province, Iran: A Qualitative Study. *Tour. Manag.* 2018, *69*, 307–316, doi:10.1016/J.TOURMAN.2018.05.007. CrossRef

[36] Yousaf, S.; Xiucheng, F. Halal Culinary and Tourism Marketing Strategies on Government Websites: A Preliminary Analysis. *Tour. Manag.* 2018, *68*, 423–443, doi:10.1016/J.TOURMAN.2018.04.006. CrossRef

[37] Samimi, A.J.; Sadeghi, S.; Sadeghi, S. The Relationship between Foreign Direct Investment and Tourism Development: Evidence from Developing Countries. *Institutions Econ.* 2013, *5*, 59–68. CrossRef

[38] Rezapouraghdam, H.; Karatepe, O.M.; Enea, C. Sustainable Recovery for People and the Planet through Spirituality-Induced Connectedness in the Hospitality and Tourism Industry. *J. Hosp. Tour. Insights* 2022, doi:10.1108/JHTI-03-2022-0103. CrossRef

[39] Kalogiannidis, S.; Kontsas, S.; Konteos, G.; Chatzitheodoridis, F. Meta Covid Era: Impact of COVID-19 on the Global Economy and Ecosystems and Opportunities for Circular Economy Strategies. 2023, 203–220, doi:10.1007/978-3-031-34059-8_10. CrossRef

[40] Chatzitheodoridis, F.; Melfou, K.; Kontogeorgos, A.; Kalogiannidis, S. Exploring Key Aspects of an Integrated Sustainable Urban Development Strategy in Greece: The Case of Thessaloniki City. *Smart Cities 2023, Vol. 6, Pages 19-39* 2022, *6*, 19–39, doi:10.3390/SMARTCITIES6010002. CrossRef

[41] Akinboade, O.A.; Braimoh, L.A. International Tourism and Economic Development in South Africa: A Granger Causality Test. *Int. J. Tour. Res.* 2010, *12*, 149–163, doi:10.1002/JTR.743. CrossRef

[42] Brida, J.G.; Sanchez Carrera, E.J.; Risso, W.A. Tourism's Impact on Long-Run Mexican Economic Growth. *Econ. Bull.* 2008, *3*, doi:10.2139/ssrn.1076225. CrossRef

[43] Dredge, D. Policy Networks and the Local Organisation of Tourism. *Tour. Manag.* 2006, *27*, 269–280, doi:10.1016/j.tourman.2004.10.003. CrossRef

[44] Manzoor, F.; Wei, L.; Asif, M.; Ul Haq, M.Z.; Ur Rehman, H. The Contribution of Sustainable Tourism to Economic Growth and Employment in Pakistan. *Int. J. Environ. Res. Public Health* 2019, *16*, doi:10.3390/ijerph16193785. CrossRef

[45] 45. Tang, C.F.; Tan, E.C. Does Tourism Effectively Stimulate Malaysia's Economic Growth? *Tour. Manag.* 2015, *46*, 158–163, doi:10.1016/j.tourman.2014.06.020. CrossRef

[46] Dritsakis, N. Tourism as a Long-Run Economic Growth Factor: An Empirical Investigation for Greece Using Causality Analysis. *Tour. Econ.* 2004, *10*, 305–316, doi:10.5367/0000000041895094. CrossRef

[47] Kim, H.J.; Chen, M.H.; Jang, S.C.S. Tourism Expansion and Economic Development: The Case of Taiwan. *Tour. Manag.* 2006, *27*, 925–933, doi:10.1016/J.TOURMAN.2005.05.011. CrossRef

[48] Lee, C.C.; Chien, M.S. Structural Breaks, Tourism Development, and Economic Growth: Evidence from Taiwan. *Math. Comput. Simul.* 2008, *77*, 358–368, doi:10.1016/j.matcom.2007.03.004. CrossRef

[49] Oh, C.O. The Contribution of Tourism Development to Economic Growth in the Korean Economy. *Tour. Manag.* 2005, *26*, 39–44, doi:10.1016/J.TOURMAN.2003.09.014. CrossRef

[50] Ozturk, I.; Acaravci, A. On the Causality between Tourism Growth and Economic Growth: Empirical Evidence from Turkey. *Transylvanian Rev. Adm. Sci.* 2009, 73–81. CrossRef

[51] Payne, J.E.; Mervar, A. Research Note: The Tourism-Growth Nexus in Croatia. *Tour. Econ.* 2010, *16*, 1089–1094, doi:10.5367/TE.2010.0014. CrossRef

[52] 52. Castellani, V.; Sala, S. Sustainable Performance Index for Tourism Policy

Development. *Tour. Manag.* 2010, *31*, 871–880, doi:10.1016/j.tourman.2009.10.001. CrossRef

[53] Işik, C.; Kasımatı, E.; Ongan, S. Analyzing the Causalities between Economic Growth, Financial Development, International Trade, Tourism Expenditure and/on the CO2 Emissions in Greece. *Energy Sources, Part B Econ. Plan. Policy* 2017, *12*, 665–673, doi:10.1080/15567249.2016.1263251. CrossRef

[54] Kim, H.; Richardson, S.L. Motion Picture Impacts on Destination Images. *Ann. Tour. Res.* 2003, *30*, 216–237, doi:10.1016/S0160-7383(02)00062-2. CrossRef

[55] Po, W.C.; Huang, B.N. Tourism Development and Economic Growth-a Nonlinear Approach. *Phys. A Stat. Mech. its Appl.* 2008, *387*, 5535–5542, doi:10.1016/j.physa.2008.05.037. CrossRef

[56] Proença, S.; Soukiazis, E. Tourism as an Economic Growth Factor: A Case Study for Southern European Countries. *Tour. Econ.* 2008, *14*, 791–806, doi:10.5367/000000008786440175. CrossRef

[57] Sokhanvar, A.; Jenkins, G.P. Impact of Foreign Direct Investment and International Tourism on Long-Run Economic Growth of Estonia. *J. Econ. Stud.* 2022, *49*, 364–378, doi:10.1108/JES-11-2020-0543. CrossRef

[58] Tavares, J.M.; Leitao, N.C. The Determinants of International Tourism Demand for Brazil. *Tour. Econ.* 2017, *23*, 834–845, doi:10.5367/te.2016.0540. CrossRef

[59] Chatzitheodoridis, F.; Michailidis, A.; Theodosiou, G.; Loizou, E. Local Cooperation: A Dynamic Force for Endogenous Rural Development. *Contrib. to Econ.* 2013, 121–132, doi:10.1007/978-3-7908-2873-3_9. CrossRef

[60] Croes, R. Tourism Specialization and Economic Output in Small Islands. *Tour. Rev.* 2013, *68*, 34–48, doi:10.1108/TR-09-2013-0050. CrossRef

[61] Surugiu, C.; Surugiu, M.R. Is the Tourism Sector Supportive of Economic Growth? Empirical Evidence on Romanian Tourism. *Tour. Econ.* 2013, *19*, 115–132, doi:10.5367/TE.2013.0196. CrossRef

[62] Tugcu, C.T. Tourism and Economic Growth Nexus Revisited: A Panel Causality Analysis for the Case of the Mediterranean Region. *Tour. Manag.* 2014, *42*, 207–212, doi:10.1016/j.tourman.2013.12.007. CrossRef

[63] Yap, G.; Saha, S. Do Political Instability, Terrorism, and Corruption Have Deterring Effects on Tourism Development Even in the Presence of Unesco Heritage? A Cross-Country Panel Estimate. *Tour. Anal.* 2013, *18*, 587–599, doi:10.3727/108354213X13782245307911. CrossRef

[64] Kalogiannidis, S.; Kontsas, S.; Nikolaou, E.E.; Chatzitheodoridis, F. The Rationale of Integrated Planning and Sustainable Development Strategies in the Development of Local Government Regional Units. 2023, 433–453, doi:10.1007/978-3-031-22749-3_27. CrossRef

[65] Nikolaou, E.E.; Konteos, G.; Kalogiannidis, S.; Syndoukas, D. Mega Sporting Events and Their Socio-Economic Impact: Case Study of the 2022 FIFA World Cup. *J. Infrastructure, Policy Dev.* 2023, *7*, 2158, doi:10.24294/JIPD.V7I2.2158. CrossRef

[66] Kalogiannidis, S.; Kontsas, S.; Chatzitheodoridis, F. Managerial Styles and Employee Performance. An Empirical Study from Bank Sector Employees in Greece. *WSEAS Trans. Environ. Dev.* 2021, *17*, 1234–1244, doi:10.37394/232015.2021.17.113. CrossRef

[67] Papadopoulou, C.I.; Loizou, E.; Melfou, K.; Chatzitheodoridis, F. The Knowledge-Based Agricultural Bioeconomy: A Bibliometric Network Analysis. *Energies 2021, Vol. 14, Page 6823* 2021, *14*, 6823, doi:10.3390/EN14206823. CrossRef

[68] Pesaran, M.H. *An Autoregressive Distributed-Lag Modelling Approach to Cointegration Analysis*; 1998; ISBN 0521633230. CrossRef

[69] Pesaran, M.H.; Shin, Y.; Smith, R.J. Bounds Testing Approaches to the Analysis of Level Relationships. *J. Appl. Econom.* 2001, *16*, 289–326, doi:10.1002/jae.616. CrossRef

[70] Nkoro, E.; Uko, A.K. Autoregressive Distributed Lag (ARDL) Cointegration Technique: Application and Interpretation. *J. Stat. Economy. Methods* 2016, *5*, 63–91. CrossRef

[71] Dickey, D.A.; Fuller, W.A. Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica: Journal of the Econometric Society,* 1981, *49*, 1057-1072. CrossRef

[72] 72. ThiMinh, L.-P.; LeMinh, H.; ThiPhi, P.-T. The Relationship Between International Tourist Arrivals and Foreign

Direct Investment: A Granger Causality Analysis. *Acta Oeconomica Pragensia* 2017, *25*, 3–12, doi:10.18267/j.aop.586. CrossRef

[73] Selvanathan, S.; Selvanathan, E.A.; Viswanathan, B. Causality between Foreign Direct Investment and Tourism: Empirical Evidence from India. *Tour. Anal.* 2012, *17*, 91–98, doi:10.3727/108354212X13330406124296. CrossRef

[74] Holzner, M. Tourism and Economic Development: The Beach Disease? *Tour. Manag.* 2011, *32*, 922–933, doi:10.1016/j.tourman.2010.08.007. CrossRef

[75] Del P. Pablo-Romero, M.; Molina, J.A. Tourism and Economic Growth: A Review of Empirical Literature. *Tour. Manag. Perspect.* 2013, *8*, 28–41, doi:10.1016/J.TMP.2013.05.006. CrossRef

[76] Brown, R. L., Durbin, J., & Evans, J. M. Technics for testing the constancy of regression relationships over time. *Journal of the Royal Statistical Society: Series B (Methodological).* 1975, 37, 149-163. CrossRef

[77] Karakitsiou, A., Mavrommati, A., Migdalas, A., & Tsiakali, K. Efficiency measurement, and evaluation of the Greek hotel industry. *Journal of Travel and Tourism Research.* 2007, 7, 96-110. CrossRef

[78] Roukos, C., Papanikolaou, C., Mountousis, I., Kandrelis, S., Chatzitheodoridis, F. 2011. Soil property variations about plant community and altitudinal zone in the rangelands of Epirus, Greece. *Bulgarian Journal of Agricultural Science*, 17(6), pp. 806–815

[79] Loizou, E., Chatzitheodoridis, F., Michailidis, A., Tsakiri, M., Theodossiou, G. 2015, Linkages of the energy sector in the Greek economy: an input-output approach. *International Journal of Energy Sector Management*, 9(3), pp. 393–411

[80] Chatzitheodoridis, F., Michailidis, A., Theodosiou, G., Loizou, E. 2013, Local cooperation: A dynamic force for endogenous rural development. *Contributions to Economics*, pp. 121–132

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