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AN EMPIRICAL EVALUATION OF THE KEYNESIAN DEMAND-DRIVEN GROWTH HYPOTHESIS IN TOURISM: A PANEL CAUSALITY ANALYSIS OF BLACK SEA AND CASPIAN SEA ECONOMIES

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Abstract: This study examines the short-term relationships among tourism capital investments, foreign tourist expenditures, and direct employment in the tourism sector across nine countries surrounding the Black and Caspian Seas during the period 1995–2024, testing the Keynesian demand-driven growth hypothesis. To analyze short-run causal linkages, the Emirmahmutoğlu and Köse (2011) panel causality test was applied at both the panel and country levels. The results reveal a bidirectional causality between tourism capital investments and foreign tourist expenditures at the panel level, a unidirectional causality from capital investments to direct employment, and a significant positive effect of foreign tourist expenditures on job creation. Country-level findings indicate bidirectional causality between investments and foreign tourist expenditures in Iran, Romania, and Azerbaijan, while in Bulgaria, Georgia, and Kazakhstan, a unidirectional causality runs from expenditures to investments. In contrast, no statistically significant relationship is observed in Russia and Turkey. Overall, the findings demonstrate that tourism capital investments enhance both revenues and employment, while foreign tourist expenditures serve as a primary determinant of labor demand, thereby supporting the Keynesian short-run demand-driven growth perspective.

Keywords: tourism, Black Sea, Caspian Sea, Emirmahmutoglu and Köse, causality

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INTRODUCTION

In today's world, where globalization has intensified international interactions, the tourism sector has emerged not only as an instrument for economic progress but also as an essential component of sustainable growth strategies in developing countries, owing to its multifaceted functions such as generating foreign exchange earnings, creating employment opportunities, and contributing structurally to the balance of trade. Advancements in technology and the rising level of global prosperity have facilitated the expansion of international tourism and enabled individuals to travel more easily. These developments have contributed to the transformation of the tourism sector into a more dynamic, competitive, and attractive industry (Crouch & Ritchie, 1999). Coastal and maritime tourism accounts for at least 50% of global tourism and 40% of related export value, making it the largest segment within the industry (UNWTO, 2025).

Among these, the sun, sea, and sand approach (3S tourism) is one of the most popular segments, representing approximately 40–45% of global tourism within the coastal tourism category. In 2024, the coastal tourism market was valued at around USD 236.09 billion and is projected to reach USD 344.5 billion by 2032 (Future Data Stats, 2025). Additionally, in 2019, the tourism sector contributed 10.3% to global GDP and provided employment to 330 million people. In some Spanish coastal regions, where the built-up area exceeds 45%, the intense impact of 3S tourism underscores the urgent need for sustainable tourism. This form of tourism plays a crucial role in preserving natural and cultural resources while delivering economic, environmental, and social benefits. These facts collectively highlight the growing importance of integrating sustainability into coastal tourism development worldwide (Mestanza-Ramón, et al., 2020).

In 2019, the share of tourism revenues in total exports was highest in Georgia at 37.2% and lowest in the Russian Federation at 3.6%. Turkey also held a significant share at 16.3%, indicating the importance of tourism for these countries'

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export earnings. Due to the COVID-19 pandemic in 2020, the share of tourism revenues in exports declined sharply across all countries; for instance, Georgia's share fell from 37.2% to 9.9%, while Turkey's decreased from 16.3% to 6.6%. This substantial reduction demonstrates the vulnerability of tourism to external shocks and highlights its critical role in the external economic structure, with the average share dropping from around 10% in 2019 to below 3% in 2020 (worldbank.org, 2025).

This study examines how sun, sea, and sand (3S) tourism shapes the tourism structure in countries bordering the Black Sea and the Caspian Sea, within the context of current global tourism trends and sustainability debates. Furthermore, it analyzes the causal relationships among tourism indicators in these regions, aiming to provide significant insights into the role of tourism in economic development (Sarkhanov, 2022). Accordingly, the study seeks to develop strategic recommendations for aligning regional tourism policies with sustainable growth objectives (Seferov & Hesenov, 2006). To better understand this dynamic, the Keynesian economic framework is employed, which argues that investment-driven increases in income stimulate employment growth, thereby emphasizing the significance of capital investments and foreign tourist expenditures within the tourism sector. In the short term, according to the Keynesian economic approach, increases in investment raise aggregate income through the multiplier effect, and this rise in income positively affects the level of employment. Within this framework, capital investments in the tourism sector are included in the analysis as investments, foreign tourist expenditures as income, and employment in the tourism sector as employment, all evaluated in accordance with the Keynesian hypothesis. Through these indicators, the contribution of sustainable and competitive tourism policies to economic growth is assessed (Mankiw, 2021).

LİTERATURE REVİEW

The nexus between tourism and economic growth is conceptualized through two main theoretical approaches. The Keynesian multiplier theory emphasizes the short - term positive effects of tourism on aggregate demand, whereas endogenous growth models examine the dynamics between tourism specialization and technological progress (Tutar et al. 2025). The first approach views international tourism as an external driver of aggregate demand, which promotes economic growth by activating multiplier mechanisms within the economy. The second perspective, grounded in Lucas's endogenous growth theory, examines how tourism-driven sectoral specialization influences economic growth, considering the roles of technological progress and cross-sectoral trade dynamics (Figini & Vici, 2009). This study primarily adopts the Keynesian multiplier framework to focus on tourism's contribution to economic growth in the short term via its effect on aggregate demand. This study applies the Keynesian multiplier theory to examine tourism's short-term positive impact on aggregate demand. It also reviews four main hypotheses explaining the tourism-economic growth relationship: tourism-led growth, economic-driven tourism growth, bidirectional causality, and neutrality (Suresh & Senthilnathan, 2014). Based on the hypotheses, methods, and variables included in the literature analyses, the studies are presented in Table 1.

Tablo 1. Literature Review of Studies on Tourism Variables

Author(s)	Country, Period & Method	Findings
Oh (2005)	Bivariate VAR model and Granger causality test; Korea (1975-2001)	- No evidence of a long-term linkage between tourism and economic growth - Unidirectional causality flows from economic growth to tourism revenue
Lee & Chang (2008)	Panel Granger causality test; OECD and non-OECD countries; (1990–2002)	- Tourism exerts a unidirectional causal impact on GDP within OECD nations - Bidirectional causality in non-OECD countries; - Weak causality in Asia - Overall, two-way relationship between GDP per capita and tourism per capita
Sokhanvar (2019)	Block Exogeneity Wald test & impulse response function; Bulgaria, Croatia, Estonia, Hungary, Iceland, Portugal, Spain; (1995–014)	- No causality from tourism receipts to FDI in any country - EG causes FDI only in Hungary; - No causality in Croatia and Portugal - FDI → TR in Bulgaria and Estonia; - TR → EG in Bulgaria, Estonia, Spain - FDI → EG in all except Croatia and Portugal
Yamak et al. (2012)	Granger causality, Engle-Granger and Johansen-Juselius cointegration; Turkey; (1968–2006)	- No long-run relationship - Causality exists between tourism and industrial/services - No causality with GDP or agriculture -Per capita tourism revenue shows no causality with a sector
Lashkarizadeh et al. (2012)	Granger Causality Test & ECM; Iran, 1980-2009;	-Short-run: economic growth → tourism -Long-run: mutual causality between tourism and economic growth
Chen & Chiou-Wei (2009)	EGARCH-M model Taiwan & South Korea (1975:Q1–2007:Q1)	- Tourism-led growth supported for Taiwan - Reciprocal causality in South Korea - Uncertainty significantly affects economic growth
Wijijayanti (2021)	FMOLS, DOLS, Granger causality; Malaysia, Laos, Indonesia, Singapore, Thailand, Myanmar, Philippines, Cambodia; (1995-2018);	- Long-run relationship among economic growth, domestic tourism expenditure, and international receipts - No short-run causal relationship in either direction
Anis et al. (2023)	FMOLS, DOLS, Granger causality; Pakistan; (1995–2021);	- Long-run: tourism receipts, trade openness, and investment significantly affect economic growth - Short-run: bidirectional causality among the variables
Caglayan et al. (2012)	Panel Granger causality; 135 countries (classified into 11 regional groups); (1995–2008)	- Europe**:** Bidirectional causality between tourism revenue and GDP - America, Latin America & Caribbean, World**:** Unidirectional causality from GDP to tourism revenue - East Asia, South Asia, Oceania**:** One-way causality from tourism revenue to GDP - Asia, Middle East & North Africa, Central Asia, Sub-Saharan Africa: No causal relationship found

Ekanayake & Long (2012)	Granger causality, FMOLS; 140 developing countries; (1995-2009)	- No long-run relationship among GDP, labor, capital, and tourism receipts - No short-run causality from labor to tourism receipts - GDP and capital have one-way short-run causality on tourism receipts
Rasool et al. (2021)	Panel ARDL, Dumitrescu-Hurlin Granger causality; BRICS countries; (1995–2015);	-Tourism, finance, and growth are linked long-term. -Tourism and growth have Bidirectional short-term causality.
Dhamo et al. (2025)	Panel ARDL, Dumitrescu-Hurlin Granger causality; Western Balkans: Albania, North Macedonia, Montenegro, Serbia, Bosnia and Herzegovina (2000–2020);	-Long-run cointegration: tourism, finance, and growth. -No short-run causality: tourism → growth. -Bidirectional causality: finance ↔ tourism, finance ↔ growth.
Seetanah (2011)	Augmented Solow growth model, GMM, Panel Granger causality; 19 island economies; (1990–2007);	-Tourism revenues to GDP ratio makes a significant contribution to economic growth -Bidirectional causality exists between tourism revenues to GDP ratio and investment to GDP ratio -Bidirectional causality exists between tourism revenues to GDP ratio and EG
Apergis & Payne (2012)	Pedroni panel cointegration, Panel Error Correction Model, FMOLS; Caribbean countries; (1995–2007);	-Long-run equilibrium exists among GDP per capita, real effective exchange rate, and tourist arrivals. -Bidirectional causality between tourism and economic growth in short and long run. -Real effective exchange rate increase lowers GDP per capita; tourism boosts growth.
Fayissa et al. (2011)	Neoclassical approach; Panel data; 18 Latin American countries; (1990–2005);	-Tourism revenues positively influence both the current level and the growth rate of per capita GDP. -The effect of tourism on economic growth is more pronounced in low-income countries.
Kum et al. (2015)	Keynesian approach; DOLS, FMOLS, Granger causality; Next-11 countries; (1995–2013);	- Long-run relationship between tourist arrivals and GDP - Tourism arrivals positively affect GDP growth - 1% ↑ in tourist arrivals → GDP ↑ by 0.06% (FMOLS), 0.08% (DOLS) - Unidirectional causality from EG to tourism arrivals - Confirms economic-driven tourism growth hypothesis
Baghirov et al. (2026)	Black Sea & Caspian Sea countries (1995–2024); Emirmahmutoğlu & Köse Panel Causality	Bidirectional causality between investments and tourist expenditures; Investments → Employment; Expenditures → Employment; Supports Keynesian demand-driven growth hypothesis
Sarkhanov & Baghirov (2024)	GUAM countries (1995–2019); Pedroni cointegration, DOLS/FMOLS	Tourism revenues positively affect GDP per capita; CPI negatively affects GDP per capita; Long-run cointegration exists among variables

DATA AND METHODOLOGY

The methodology of this study follows a structured approach, beginning with the collection of data on tourism capital investments, foreign tourist expenditures, and direct employment across nine countries for the period 1995–2024. The data were log-transformed to address scale differences, followed by the application of cross-sectional dependence tests (Pesaran CD, Pesaran Scaled LM, Breusch-Pagan LM) and the CIPS panel unit root test to assess the stationarity of the variables. Subsequently, the Emirmahmutoğlu & Köse panel causality test was employed to examine short-term causal relationships, and the findings were analyzed and interpreted within the framework of Keynesian demand-driven growth. The study investigates the short-term interactions among tourism capital investments, foreign tourist expenditures, and direct employment, positing that increases in capital investments positively influence both foreign tourist spending and employment, while higher foreign tourist expenditures may further stimulate capital investment. Within this context, capital investments are considered a key driver supporting growth and employment in the tourism sector, and the study evaluates the validity of the demand-driven growth hypothesis through the lens of mutual causality among these variables.

Previous literature indicates that verifying this hypothesis may result in four possible causality outcomes: a bidirectional relationship between variables, no relationship, unidirectional causality from the first variable to the second, or unidirectional causality from the second to the first. To test these hypotheses, panel causality tests developed by Emirmahmutogu & Köse (2011) were applied using data from nine countries. These include five countries bordering the Black Sea (Bulgaria, Georgia, Romania, Turkey, and Ukraine), three countries bordering the Caspian Sea (Azerbaijan, Kazakhstan, and Iran; Turkmenistan was excluded due to data limitations), and the Russian Federation, which borders both seas. The dataset covers the period from 1995 to 2024, consisting of 270 balanced panel observations. The variables included capital investments and foreign tourist spending expressed in current US dollars, while direct employment in tourism was measured by the number of persons employed in the sector. These data were sourced from reputable international and national organizations such as the World Bank, CEIC Data, WTTC, and respective national statistical agencies. To address scale differences among variables and better capture proportional relationships, all data were transformed into their logarithmic forms. The analyses were conducted using STATA 18, GAUSS 16, and EViews 12 software packages.

In the empirical analysis, the presence of cross-sectional dependence among the variables was initially assessed using the Pesaran CD, Pesaran Scaled LM, and Breusch-Pagan LM tests to determine the appropriate generation of unit root tests. Given the detection of cross-sectional dependence, the second-generation CIPS unit root test was subsequently applied to evaluate the stationarity properties of the variables (Baghirov et al., 2025). Based on these results, the Emirmahmutoglu &

Köse panel causality test—which accounts for heterogeneity across units and allows for short-run panel-level causality—was employed, enabling a robust examination of the causal relationships among the variables.

Cross-Sectional Dependence Tests

In panel data analyses examining short-run relationships, detecting cross-sectional dependence among units is crucial. To this end, Pesaran CD, Pesaran Scaled LM, and Breusch-Pagan LM tests are applied both at the variable level and within the Keynesian and New Keynesian framework to assess cross-sectional dependence among panel units. The Breusch-Pagan test statistic is given by (Breusch & Pagan, 1980):

$$\mathrm{CD_{LM}} = T \sum_{i=1}^{N-1} \sum_{J=i+1}^{N} \hat{p}_{ij}^2 \qquad (1)$$

Here, $\hat{p}_{ij}^2$ represents the correlation between error terms of units i and j. The test statistic follows a chi-square x^2 distribution with $N(N-1)/2$ degrees of freedom. However, Pesaran (2004) proposed an alternative statistic to address potential misleading results in large samples.

$$\mathrm{CD_{LM1}} = \sqrt{\frac{1}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{J=i+1}^{N} (T\,\hat{p}_{ij}^2 - 1) \qquad (2)$$

Pesaran (2004) improved the original test to better handle large samples and also developed an alternative statistic for cases where the number of units (N) exceeds the time dimension (T).

$$\mathrm{CD_{LM2}} = \sqrt{\frac{2T}{N(N-1)}} \left(\sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{p}_{ij} \right) \qquad (3)$$

For all tests, the null hypothesis assumes no cross-sectional dependence among units, while the alternative hypothesis indicates its presence (Pesaran, 2007).

Cips Panel Unit Root Test

Pesaran's (2007) CIPS test is a second-generation panel unit root test that accounts for heterogeneity and cross-sectional dependence by averaging individual CADF statistics across units, making it suitable for panels with large N and T (Pesaran, 2007):

$$\mathrm{CIPS\,(N,T)} = \mathrm{t-bar} = \frac{1}{\mathrm{N}} \sum_{\mathrm{i=1}}^{\mathrm{N}} \mathrm{t_i\,(N,T)} \quad or \quad \mathrm{CIPS} = \frac{1}{\mathrm{N}} \sum_{\mathrm{i=1}}^{\mathrm{N}} \mathrm{CADF}_i \qquad (4)$$

In this context, $\mathrm{t_i\ (N,T)}$ is the CADF test statistic for each panel unit. The CIPS value is compared to Pesaran's (2007) critical values from Monte Carlo simulations, and if it exceeds the threshold, the null hypothesis of a unit root is rejected, indicating stationarity Yerdelen Tatoğlu, 2020.

Emirmahmutoglu and Kose Panel Causality Test

If the variables in a VAR process are non-stationary, the classical Granger causality test cannot be applied because the Wald statistics do not follow a standard distribution. Toda & Yamamoto (1995) proposed a model that allows causality testing without requiring stationarity by augmenting the lag length with the maximum order of integration. Building on this approach, Toda & Yamamoto (1995) developed a methodology which was later extended by Emirmahmutoğlu & Köse (2011) to a heterogeneous panel causality test (Baghirov & Sarkhanov, 2025). This test can be reliably applied even when the series have different orders of integration (I(0) and I(1)) and in the absence of a cointegration relationship (Topallı, 2015). In the Emirmahmutoglu & Köse panel causality test, d_{max} represents the maximum integration order and $\mathrm{k}_i$the optimal lag length for each variable. The model considers time $(\mathrm{t} = 1, \ldots \ldots, \mathrm{T})$ and cross-sectional units $(\mathrm{j} = 1, \ldots \ldots, \mathrm{N})$. The null hypothesis states that no causal relationship exists among the variables, while the alternative hypothesis asserts the presence of causality (Demez & Polat, 2021).

$$\mathrm{Y_{i,t}} = \mathrm{a_{1,i}} + \sum_{\mathrm{j=1}}^{\mathrm{k_i+d\ max_i}} \beta_{1,\mathrm{ij}}\, \mathrm{Y_{i,t-j}} + \sum_{\mathrm{j=1}}^{\mathrm{k_i+d\ max_i}} \delta_{1,\mathrm{ij}} \mathrm{X_{i,t-j}} + \varepsilon_{1,\mathrm{it}} \qquad (5)$$

$$\mathrm{X_{i,t}} = \mathrm{a_{2,i}} + \sum_{\mathrm{j=1}}^{\mathrm{k_i+d\ max_i}} \beta_{2,\mathrm{ij}}\, \mathrm{Y_{i,t-j}} + \sum_{\mathrm{j=1}}^{\mathrm{k_i+d\ max_i}} \delta_{2,\mathrm{ij}} \mathrm{X_{i,t-j}} + \varepsilon_{2,\mathrm{it}} \qquad (6)$$

FINDINGS

In this study, within the framework of the Keynesian short-run approach, the structural properties of the panel data set were examined in detail through multiple stages to obtain reliable and valid results, aiming to investigate the bidirectional causal relationships among capital investments in tourism, foreign tourist spending, and direct employment in tourism, as well as to test the demand-driven growth hypothesis (Suresh & Senthilnathan, 2014). First, cross-sectional dependence tests were conducted, revealing the presence of cross-sectional dependence within the panel dataset. Accordingly, the second-generation CIPS panel unit root test, which is appropriate for panel data, was employed. Within this framework, the graphical representations presented in Appendix 1 were analyzed to determine whether the model should be specified with a constant or with both a constant and a trend. The results of this examination revealed the absence of a significant trend

component in the series; therefore, the analysis was conducted under a constant specification. Consequently, all variables included in the analysis were found to be stationary at their levels. Considering these stationarity properties, the panel causality test developed by Emirmahmutoglu & Köse, which accounts for heterogeneity across units, was employed to identify short-term causal relationships both at the panel level and at the individual (country) level. This approach enabled a comprehensive and robust assessment of the causal relationships among the variables. In Table 2 below, within the framework of the Keynesian short-run approach and in line with the demand-driven growth hypothesis, the results of cross-sectional dependence among variables are presented using the Breusch-Pagan (1980) LM test, Pesaran's (2004) scaled LM test, and Pesaran's (2004) CD test, along with the results of the CIPS panel unit root test.

Table 2. Cross-Section Dependence Test and CIPS Panel Unit Root Test Results

Variables	Breusch-Pagan LM	Pesaran scaled LM	Pesaran CD	CIPS (I(0))
LnCI	457.7217*	49.70038*	16.02839*	-3.049*
LnFTS	504.9246*	55.26330*	21.18048*	-2.760*
LnEMP	205.9312*	20.02658*	3.123664*	-2.708*
Critical Values for CİPS Test		10%	5%	1%
		-2.21	-2.33	-2.57

*, **, and *** indicate rejection of the null hypothesis at the 1%, 5%, and 10% significance levels, respectively

As the results of the Breusch-Pagan LM, Pesaran scaled LM, and Pesaran CD tests in Table 2 indicate significant cross-sectional dependence among the variables, the application of second-generation unit root tests is deemed appropriate for the analyses. The CIPS panel unit root test results reveal that all variables are level stationary (I(0)), as the test statistics are below the critical values at the 1% significance level, thereby confirming the absence of unit roots and supporting the appropriateness of the data for subsequent causality analyses. Table 3 below presents the results of the Emirmahmutoğlu & Köse Panel Causality Test, which illustrates the causality relationship between capital investments in tourism and foreign tourist spending both at the panel level and across the individual countries included in the analysis.

Table 3. Emirmahmutoğlu and Kose Panel Causality Test Results (lnci-lnfts)

Countries	**H₀: lnci → lnfts**			**H₀: lnfts → lnci**		
	Lag	Wald	P-value	Lag	Wald	P-value
Azerbaijan	3	12.414	0.006*	3	6.729	0.081***
Bulgaria	4	7.322	0.120	4	28.183	0.000*
Georgia	4	5.793	0.215	4	14.660	0.005*
Iran	4	18.941	0.001*	4	17.784	0.001*
Kazakhstan	1	5.662	0.017**	1	0.861	0.353
Romania	4	10.910	0.028**	4	11.127	0.025**
Russian Federation	1	2.151	0.143	1	0.536	0.464
Turkey	1	0.244	0.622	1	0.510	0.475
Ukraine	2	5.000	0.082***	2	4.206	0.122
PANEL	Panel Fisher		**56.900**	Panel Fisher		**68.074**
	p-value		**0.000***	p-value		**0.000***

*, ** and *** Indicates that the null hypothesis is rejected at the 1%, 5%, and 10% significance level, respectively

Table 3 presents the results of the Emirmahmutoglu & Köse Panel Causality Test, examining the direction of causality between capital investments in tourism and foreign tourist spending at both the panel level and across individual countries included in the analysis. At the panel level, the findings indicate a statistically significant bidirectional causality between capital investments in tourism and foreign tourist spending, as evidenced by the Panel Fisher statistics. Country-specific results reveal a significant bidirectional causality between capital investments and foreign tourist spending in Iran, Romania, and Azerbaijan. This suggests that capital investments not only contribute to increasing tourism revenues but also that rising tourism revenues positively influence further investments.

Table 4. Emirmahmutoğlu and Kose Panel Causality Test Results (lnci-lnemp)

Countries	**H₀: lnci → lnemp**			**H₀: lnemp → lnci**		
	Lag	Wald	P-value	Lag	Wald	P-value
Azerbaijan	1	3.076	0.079***	1	0.313	0.576
Bulgaria	1	18.579	0.000*	1	0.403	0.526
Georgia	1	0.413	0.521	1	9.559	0.002**
Iran	1	1.440	0.230	1	0.810	0.368
Kazakhstan	1	15.988	0.000*	1	1.642	0.200
Romania	1	6.112	0.013**	1	0.201	0.654
Russian Federation	3	20.053	0.000*	3	2.069	0.558
Turkey	1	2.646	0.104	1	0.293	0.588
Ukraine	2	1.329	0.515	2	1.116	0.572
PANEL	Panel Fisher		**82.571**	Panel Fisher		**24.238**
	p-value		**0.000***	p-value		**0.147**

*, ** and *** Indicates that the null hypothesis is rejected at the 1%, 5%, and 10% significance level, respectively

Notably, this bidirectional relationship is strongly significant at the 1% level in Iran and Romania, whereas in Azerbaijan, the effect of capital investments in tourism on foreign tourism spending is robust, and the reverse causality from tourism spending to investments is significant at the 10% level. Conversely, in Bulgaria and Georgia, unidirectional causality runs from foreign tourist spending to tourism capital investments. In contrast, Ukraine and Kazakhstan exhibit a weak and limited unidirectional causality from capital investments to foreign tourist spending. No statistically significant causal relationship between capital investments in tourism and foreign tourist spending is observed in the Russian Federation and Turkey. Table 4 presents the Emirmahmutoglu & Köse Panel causality test results on the relationship between tourism capital investments and direct employment at both panel and country levels.

Table 4 presents the results of the Emirmahmutoğlu and Köse Panel Causality Test, examining the direction of causality between capital investments in tourism and direct employment in tourism at both the panel level and across individual countries included in the analysis. The Panel Fisher statistics at the panel level indicate a statistically significant unidirectional causality running from capital investments in tourism to direct employment in tourism. Conversely, no significant causality is detected from direct employment in tourism to capital investments. Country-level analyses reveal a positive and statistically significant unidirectional effect of capital investments on direct employment in tourism in Azerbaijan (at the 10%), Bulgaria, Kazakhstan, the Russian Federation, and Romania, whereas in Georgia, a unidirectional causality running from direct employment in tourism to capital investments is identified at the 5%. No significant causal relationship was found between capital investments in tourism and direct employment in tourism in Iran, Turkey, and Ukraine. Table 5 presents the results of the Emirmahmutoğlu and Köse Panel Causality Test, examining the causality between foreign tourist spending and direct employment in tourism at both the panel and country levels.

Table 5. Emirmahmutoğlu and Kose Panel Causality Test Results (lnfts-lnemp)

Countries	**H_0: lnfts → lnemp**			**H_0: lnemp → lnfts**		
	Lag	Wald	P-value	Lag	Wald	P-value
Azerbaijan	1	8.662	0.003*	1	2.413	0.120
Bulgaria	2	25.638	0.000*	2	1.649	0.438
Georgia	4	8.294	0.081***	4	11.942	0.018**
Iran	3	22.416	0.000*	3	0.454	0.929
Kazakhstan	2	16.589	0.000*	2	3.066	0.216
Romania	1	4.899	0.027**	1	0.225	0.635
Russian Federation	1	7.257	0.007*	1	0.084	0.772
Turkey	2	18.841	0.000*	2	0.233	0.890
Ukraine	4	316.026	0.000*	4	4.213	0.378
Model	Panel Fisher		**420.244**	Panel Fisher		**20.762**
	p-value		**0.000***	p-value		**0.292**

*, ** and *** Indicates that the null hypothesis is rejected at the 1%, 5%, and 10% significance level, respectively

Table 5 presents the results of the Emirmahmutoğlu and Köse Panel Causality Test, examining the direction of causality between foreign tourist spending and direct employment in tourism at both the panel level and across individual countries included in the analysis. At the panel level, the Panel Fisher statistics indicate a statistically significant unidirectional causality running from foreign tourist spending to direct employment in tourism. Country-level results indicate that foreign tourist spending have a positive and significant impact on direct employment in tourism in Azerbaijan, Bulgaria, Iran, Kazakhstan, the Russian Federation, Turkey, and Ukraine. In Georgia, a bidirectional causality is observed, with foreign tourist spending affecting employment at the 10% significance level, and employment influencing spending at the 5% significance level. These findings suggest that foreign tourist spending serve as a primary driver of employment creation in the tourism sector, while employment may also, at times, support tourist spending. Overall, although the dynamic relationship between tourism revenues and employment varies across countries, foreign tourist spending plays a critical role in enhancing employment within the tourism industry.

CONCLUSION

Within the framework of the Keynesian short-run approach, this study examines the dynamic relationships among capital investments in tourism, foreign tourist spending, and direct tourism employment by applying the Emirmahmutogu & Köse panel causality test at both the panel and country levels. The findings offer important theoretical and practical insights, particularly regarding the demand-driven growth hypothesis. At the panel level, a statistically significant bidirectional causality is identified between tourism capital investments and foreign tourist spending, indicating a mutually reinforcing relationship wherein investments enhance tourism revenues, and increased revenues stimulate further investments—consistent with the Keynesian perspective. Additionally, a unidirectional causality from capital investments to direct tourism employment suggests that such investments have a job-creating effect, underlining the role of supply-side policies in employment generation. Furthermore, the analysis reveals a significant unidirectional causality from foreign tourist spending to employment, highlighting the positive impact of tourism demand on job creation and reinforcing the validity of the Keynesian demand-driven growth approach.

The study's findings robustly support the Keynesian short-run framework. Consistent with Lashkarizadeh et al. (2012), Kum et al. (2015), and Rasool et al. (2021), there is strong evidence of bidirectional causality between tourism, economic growth, and investment, reflecting a demand-driven growth mechanism.

The panel-level results, aligned with Lee & Chang (2008) and Caglayan et al. (2012), reveal that investments enhance tourism revenues and vice versa. Unidirectional causality from capital investments to employment highlights supply-side policy effects, while causality from foreign tourist expenditures to employment supports Keynesian demand-led growth, echoing findings by Seetanah (2011), Apergis & Payne (2012), and Anis et al. (2023). Country-specific differences demonstrate the heterogeneity of tourism sectors and economic structures, with Iran, Romania, and Azerbaijan showing strong bidirectional relations, while Russia and Turkey lack such causality, in line with regional variations noted by Caglayan et al. (2012) and Ekanayake & Long (2012). Overall, the findings confirm the Keynesian demand-driven growth hypothesis while emphasizing the importance of context-specific analyses.

Country-level analyses reveal that Iran, Romania, and Azerbaijan exhibit significant bidirectional causality between capital investments in tourism and foreign tourist spending, indicating a dynamic interplay between investment and demand in these countries. In contrast, Bulgaria and Georgia demonstrate unidirectional causality running from foreign tourist spending to capital investments, while Ukraine and Kazakhstan show weak unidirectional causality from investments to spending. No significant causality is found between these variables in the Russian Federation and Turkey.

Furthermore, the analyses indicate a positive and statistically significant unidirectional effect of capital investments on direct employment in tourism in Azerbaijan, Bulgaria, Kazakhstan, the Russian Federation, and Romania. Conversely, in Georgia, a significant unidirectional causality from direct employment to capital investments is observed, while no significant causal relationship between investments and employment is detected in Iran, Turkey, and Ukraine. Additionally, a bidirectional causality exists between foreign tourist spending and direct tourism employment in Georgia.

In Azerbaijan, Bulgaria, Iran, Kazakhstan, the Russian Federation, Turkey, and Ukraine, foreign tourist spending has a positive and significant unidirectional effect on direct tourism employment, suggesting that tourist spending is a fundamental driver of employment growth in the tourism sector**.** The findings indicate that while foreign tourist spending significantly influence capital investments and tourism employment in some countries, thereby supporting the Keynesian demand-driven growth hypothesis, this relationship is not consistently observed across all countries analyzed.

Based on the findings, policymakers should prioritize increasing foreign tourist spending to promote investment and employment growth in countries where demand-driven effects are pronounced, while supporting targeted capital investments to strengthen job creation and sustainable tourism development. However, in countries where the Keynesian demand-driven growth hypothesis is not supported and the relationships between capital investments, foreign tourist spending, and employment are weak or insignificant, comprehensive policies addressing both supply and demand factors should be developed. In this regard, investments in tourism infrastructure, human capital development, and marketing should be enhanced to improve the sector's competitiveness, thereby increasing the effectiveness of investments and facilitating the conversion of tourist spending into employment growth. Future research should extend the examination of the Keynesian demand-driven growth hypothesis across a broader range of countries and longer time periods, while this study provides significant empirical evidence on the dynamic relationships among tourism demand, investment, and employment, contributing meaningfully to both theory and practice.

APPENDIX

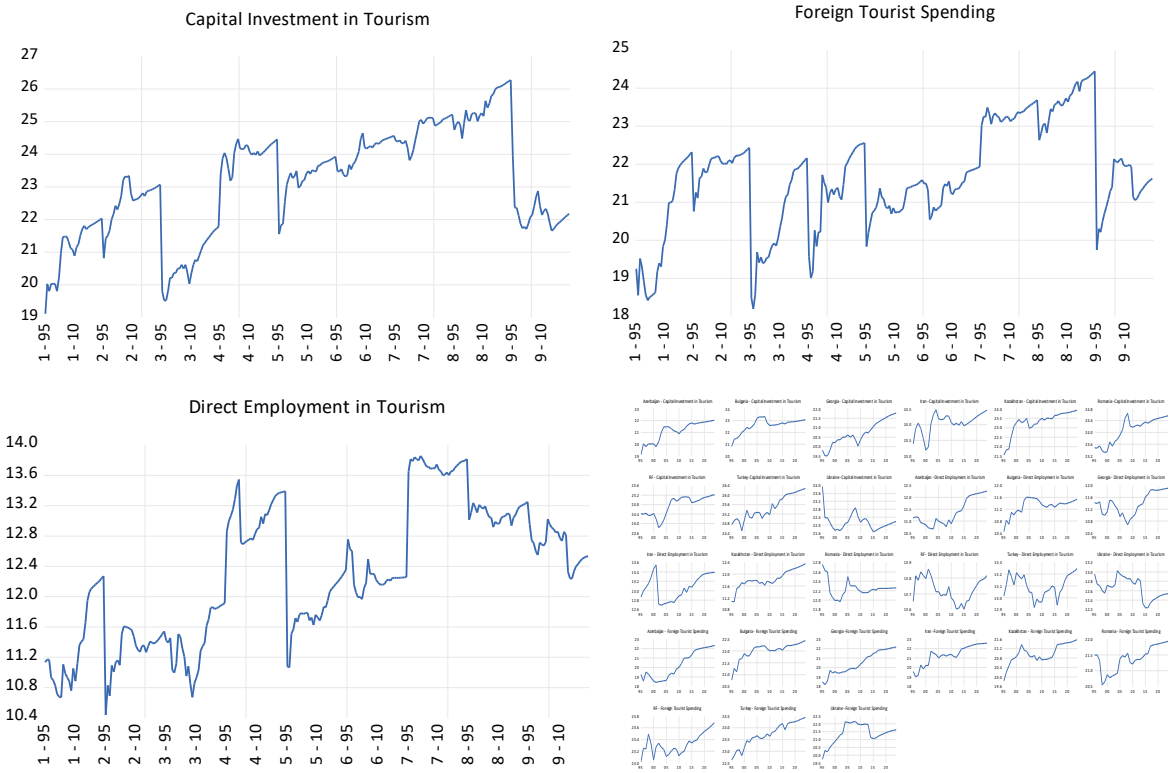

Figure 1. Logarithmic Structure Analysis of Variables by Country and Group

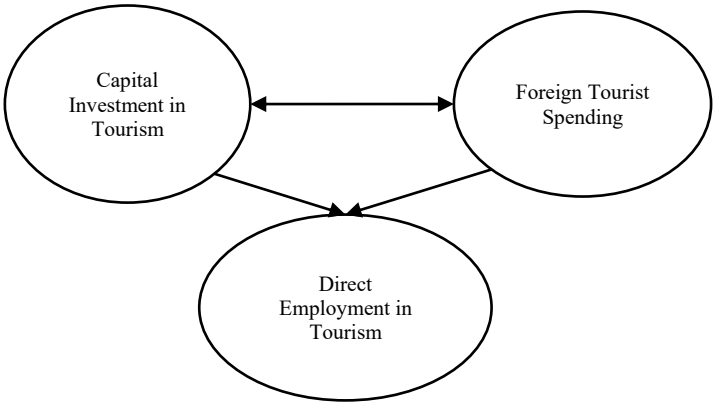

Figure 2. Panel Causality Nexus between Tourism Factors for the Black and Caspian Sea
Note: → and ↔ denote unidirectional causality and bidirectional causality, respective

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