# “Tourism as a driver of economic development in Armenia: Macroeconomic linkages and regional disparities”


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# TOURISM AS A DRIVER OF ECONOMIC DEVELOPMENT IN ARMENIA: MACROECONOMIC LINKAGES AND REGIONAL DISPARITIES

## Abstract

Tourism has become a key driver of inclusive growth and economic diversification in transition economies, including the Republic of Armenia, making it a priority area of development. This study evaluates the interaction between tourism sector indicators and national macroeconomic performance on GDP. Annual data for 2001–2023 were analyzed using a robust econometric framework that integrates LASSO regression, Granger causality tests, and Vector Autoregression (VAR) modeling. GDP was consistently treated as the dependent variable, while LASSO served only as a variable selection tool to identify the most influential indicators.

The results reveal that economic growth is shaped not only by quantitative expansion but also by qualitative improvements. Hotel infrastructure ($\beta = 3.59$, $p = 0.011$) and the share of tourism in total exports ($\beta = 18.99$, $p = 0.046$) significantly stimulate GDP, while international tourist arrivals show a negligible and slightly negative correlation ($-0.000097$, $p = 0.036$), underscoring the limited efficiency of visitor numbers without adequate monetization. Spatial analysis highlights a concentrated market structure, with 82% of revenues concentrated in Yerevan (HHI = 0.70), despite Kotayk's high specialization index (LQ = 14.1). Regional elasticity estimates indicate that Vayots Dzor ($\varepsilon \approx 0.85$), Kotayk ($\varepsilon \approx 0.67$), and Syunik ($\varepsilon \approx 0.58$) are most sensitive to tourism-driven growth, far above the national average ($\varepsilon \approx 0.34$).

These findings suggest that Armenia's tourism-led GDP growth depends on infrastructure modernization, high-value services, and balanced regional development. Policy interventions should prioritize decentralization and large-scale investment over simple visitor growth.

**Keywords** tourism, development, infrastructure, causality, regression, assessment, Armenia, regional

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## INTRODUCTION

Nowadays, one of the most dynamic sectors of the global economy is tourism. It has a multifaceted impact on the economy: in addition to the direct increase in output, tourism creates jobs, attracts foreign exchange, and stimulates the growth of related sectors.

Tourism is of great importance for the Armenian economy not only in terms of direct economic investment (the formation of added value, income and employment), but also in terms of indirect and stimulating effects spreading to related sectors and activating the overall economic turnover.

The tourism market of Armenia has significant regional differences, due to numerous socio-economic factors of territorial development.



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Moreover, the effectiveness of local tourism submarkets and the processes through which tourism activities contribute to regional economic results have not received sufficient attention in the literature. The relationship between tourism and economic growth is interpreted within the framework of various theoretical approaches, from export-based growth models to hypotheses of a two-way causality relationship. However, to date, there is no comprehensive quantitative assessment for the Armenian economy that would simultaneously analyze both the macroeconomic impact of tourism and its territorial manifestations using modern econometric tools.

Addressing this gap requires recognizing causal relationships, structural feedbacks, and geographical differentiation within a single analytical framework.

## 1. LITERATURE REVIEW AND HYPOTHESES

The assessment of tourism's economic impact has long been a central focus of both academic inquiry and policy-making, owing to the sector's investment appeal, wide-ranging economic consequences, and potential to stimulate macroeconomic growth (Dwyer, 2015; Gunter et al., 2024; Seetanah et al., 2020). The scientific literature in this domain can be broadly grouped into four key directions: methodological approaches, evaluation of the multiplier effect, the structural role of tourism within the economy, and the interconnection between policy and methodology. Tourism is increasingly conceptualized not merely as a service-sector activity, but as a complex economic system that contributes to exports, employment generation, regional development, and long-term economic diversification (UNWTO, 2008; Blake et al., 2008; Fang et al., 2021).

The classical methodological foundation for assessing tourism's economic effects continues to rely on Input–Output (IO) and Computable General Equilibrium (CGE) models, which allow for the systematic analysis of inter-sectoral linkages and the estimation of direct, indirect, and induced effects (Fletcher, 1989; Dwyer et al., 2005; Blake, 2000; Meng & Siriwardana, 2017). These approaches have been extensively applied in developed economies, where detailed national accounts and Tourism Satellite Accounts (TSA) are available (UNWTO, 2008; Dwyer & Forsyth, 2006). However, in developing and transition economies, the application of CGE and IO frameworks is frequently constrained by limited data availability and institutional capacity (Surugiu, 2009; Lima & Teperek, 2023).

In response to these constraints, recent research has increasingly adopted dynamic econometric techniques, including Vector Autoregression (VAR), Panel VAR, and Structural VAR (SVAR) models, which offer greater flexibility in data-scarce environments and allow for the identification of dynamic causal relationships (Ayvazyan & Daban Sanchez, 2015; Colacchio & Vergori, 2023; Wijesekara et al., 2022). Systematic reviews and meta-analyses confirm a growing methodological pluralism in the field, combining model-based simulations with time-series and panel econometric approaches to capture both short-term dynamics and longer-term structural effects (Pablo-Romero & Molina, 2013; Brida et al., 2016; Lima & Teperek, 2023). While CGE models provide high analytical precision, their intensive data requirements continue to limit their applicability in many emerging economies, where more flexible econometric approaches are often preferred (Dwyer, 2015; Seetanah et al., 2020).

A substantial body of the literature focuses on the tourism multiplier effect, which reflects the extent to which tourist expenditures generate additional output, income, and employment throughout the broader economy (Fletcher & Archer, 1991; Frechtling & Horváth, 2017). Empirical evidence suggests that the magnitude of tourism multipliers varies significantly depending on the degree of economic openness, import leakages, and the development of domestic supply chains (Surugiu, 2009; Incera & Fernández, 2015). Regional-level analyses further demonstrate that tourism-driven growth may contribute to spatial and income disparities, highlighting the importance of complementary regional and social policies to ensure more inclusive development outcomes (Blake et al., 2008; Njoya & Seetaram, 2018).

Another important strand of research addresses the structural role of tourism in national economies, particularly its contribution to economic diversification, fiscal stability, and resilience to external shocks. Tourism is frequently identified as a stabilizing force in economies that are highly dependent on volatile sectors such as mining, hydrocarbons, or primary commodity exports (Gunter et al., 2024; Seetanah et al., 2020). In this context, tourism development is associated with an expansion of the export base, improved balance-of-payments performance, and enhanced resistance to cyclical and external disturbances (Balaguer & Cantavella-Jordá, 2002; Dogru & Bulut, 2018). A growing number of studies also emphasize the bidirectional relationship between tourism and economic growth, providing empirical support for the tourism-led growth hypothesis as well as feedback effects from income growth to tourism demand (Brida et al., 2016; Wijesekara et al., 2022).

More recent contributions emphasize the interaction between tourism policy frameworks and methodological approaches. Integrated modeling strategies increasingly examine the links between tourism revenues, infrastructure investment, labor market flexibility, and long-term growth trajectories (Nowak et al., 2025). These studies highlight the role of public investment and institutional quality in amplifying the growth effects of tourism and in reducing regional and social disparities (Antolini et al., 2023; Seetaram & Petit, 2012). At the same time, international statistical standards, particularly the International Recommendations for Tourism Statistics (IRTS 2008) and the Tourism Satellite Account (TSA) framework, have played a central role in improving data comparability and strengthening the empirical foundations of tourism-related policy evaluation (UNWTO, 2008, 2018).

Studies focusing on Armenia and the broader Eurasian region confirm the generally positive macroeconomic effects of tourism development, while also emphasizing country-specific transmission mechanisms. Comparative analyses indicate that increased tourism consumption and expenditures contribute to GDP growth and poverty reduction, although the effects on employment tend to be more moderate and unevenly distributed across regions (Tovmasyan, 2022). Furthermore, evidence from structural VAR analyses suggests that external shocks affect the Armenian economy largely through indirect channels, including transfers, financial flows, and export volumes, within which tourism-related flows play a non-negligible role (Ayvazyan & Daban Sanchez, 2015). In addition, studies by the Asian Development Bank (ADB) on the linkages between regional economic growth and tourism have shown that elasticity estimates can vary depending on the economic structure of a given country and the integration of supply chains (Anyu, 2022).

Overall, the reviewed literature demonstrates that the economic effects of tourism are multidimensional and highly sensitive to both methodological choices and country-specific structural characteristics (Lima & Teperek 2023; Pablo-Romero & Molina, 2013). A growing number of studies emphasize that tourism exports are a particularly effective driver of economic growth, whereas direct tourism-related imports tend to exert a weaker influence on overall economic performance (Gunter et al., 2024; Fang et al., 2021). These findings underscore the importance of distinguishing between different components of tourism flows when assessing their macroeconomic and regional development implications.

Grounded in the existing empirical and methodological literature that highlights the multidimensional and contextspecific impacts of tourism on economic growth, diversification, and regional development, this study aims to provide a comprehensive evaluation of tourism's macroeconomic and regional consequences in Armenia. The following hypotheses are formulated:

*H1: Tourism exports are expected to have a positive and statistically significant effect on Armenia's GDP, serving as a key driver of macroeconomic stability.*

*H2: The economic contribution of tourism is shaped more by the highvalue export component within services than by the sheer volume of inbound tourist arrivals.*

*H3: Tourism development is anticipated to stimulate regional economic growth in Armenia, though the magnitude of these effects is likely*


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*to vary considerably across administrative territories.*

*H4: National GDP growth is hypothesized to generate a feedback loop that further boosts tourism demand and encourages sectoral investment.*

*H5: The quality and density of physical infrastructure are expected to play a mediating role in the relationship between tourism activity and overall economic performance.*

## 2. METHODS

The economic impact of tourism in the Republic of Armenia was examined using quantitative econometric modeling to identify the proportional and dynamic relationships between key tourism sector indicators and GDP (Karapetyan et al., 2025).

LASSO regression was applied to optimize the factorial structure of tourism's economic impact and select the key influential indicators for GDP formation. Importantly, GDP was the dependent variable throughout the study; LASSO served only as a variable selection tool, identifying explanatory variables such as inbound tourists, travel agencies' revenue, hotel count, air transport, and air arrivals. Granger causality analysis was used to assess causal relationships with a lag structure of 1–4 years, confirming bidirectional causality between tourism activity and GDP. VAR modeling established the multilateral interactions between GDP and selected tourism indicators. Impulse Response Function (IRF) was utilized to assess the duration and direction of economic shocks within the system. Regional assessment evaluated tourism's spatial impact using the Location Quotient (LQ), market concentration indices (CR, HHI), and regional GDP responsiveness via the elasticity (ε) multiplier.

The analysis uses annual data from 2001 to 2023, taken from the Statistical Committee of the Republic of Armenia, the World Bank, and UNWTO. The quantitative assessment of tourism activity at the regional level was based on the data published by the RA Tourism Commission on hotel revenue (million drams), tourist flows, employees involved in the hotel network, average expenditure per tourist, and regional GDP (million drams).

GDP is the dependent variable. The following were chosen as independent variables: the number of inbound tourists, domestic tourists, spending per tourist, travel agencies' revenue, hotel count, number of air transports, number of air arrivals, share of tourism exports in services (%), and total number of hotel beds.

LASSO Regression (Least Absolute Shrinkage and Selection Operator) was applied to optimize the factorial structure of tourism's economic impact and select the key influential indicators. This method allowed us to regulate the risk of model overfitting and select predictive variables from the perspective of Gross Domestic Product creation. The model predicted the "Tourists" variable based on the variables listed above.

The results showed that five variables have the maximum impact: number of inbound tourists; revenue of travel agencies; number of hotels; number of air transports; and number of air arrivals.

Granger causality testing helps us identify whether past values of one time series can predict future values of another. The Granger causality test confirmed the causal effect of the following indicators.

The Vector Autoregression (VAR) model was used to assess the combined dynamic impact of factors on GDP. The impulse response analysis provides insights into the dynamic relationship between tourism and economic performance. When the share of tourism exports experiences a shock, GDP responds with a marked increase, though the effect gradually diminishes over time.

There are significant territorial differences in Armenia regarding tourism growth and the economic structure. The Republic of Armenia comprises 11 administrative regions: Aragatsotn, Ararat, Armavir, Gegharkunik, Kotayk, Lori, Shirak, Syunik, Tavush, Vayots Dzor, and the city of Yerevan. To assess the impact of inbound tourism on individual regions, we have constructed a Location Quotient (LQ) index for the tourism sector. It was considered from two perspectives: tour-

ism revenue and concentration level. Due to data scarcity, we treated the annual revenue of hotel establishments in a given region as tourism revenue.

$$LQ_{rev/tur}(r,t) = \frac{\frac{Rev_{r,t}}{\sum_r Rev\_r,t}}{\frac{Tour_{r,t}}{\sum_r Tour\_r,t}}, \quad (1)$$

where $Rev_{r,t}$ is hotel revenue, $Tour_{r,t}$ is number of inbound tourists to the region in a given year.

Moreover, if ($LQ > 1$), then the hotel revenue attributed to one tourist is higher than the average in the region (possibly high value/night, resort services, packaged offers).

In addition, if ($LQ < 1$), the flow of tourists is not converted into hotel revenue (short stays, non-hotel accommodation, low-segment).

The level of concentration was measured by the concentration ratio (CR) and the Herfindahl–Hirschman Index (*HHI*). The first is measured by the following formula:

$$CR = \sum_{i=1}^{n} S_i, \quad (2)$$

where $S_i$ is the leading $n$ regions in terms of revenue in the given year.

*HHI* (Herfindahl–Hirschman Index) is calculated by the following formula:

$$HHI = \sum_{i=1}^{n} S_{r,t}^2, \quad (3)$$

where $S_{r,t}$ is the relative weight of a region's hotel revenue within the aggregate revenue of the hotel industry.

A high *HHI* indicates high market concentration in the hotel industry, while a low HHI indicates a more diversified distribution.

To measure how sensitive a region's economy is to tourism, we calculated the direct elasticity coefficient (ε):

$$\varepsilon = \frac{\%\Delta GDP_{r,t}}{\%\Delta Rev_{r,t}} \cdot 100\%, \quad (4)$$

where $\Delta GDP_{r,t}$ and $\Delta Rev_{r,t}$ are the growth rates for regional GDP and hotel revenues. We used the average figures for 2016–2023 to ensure the results were not skewed by short-term fluctuations.

## 3. RESULTS AND DISCUSSION

The estimation results from the VAR model reveal that the selected variables exert a combined dynamic influence on GDP.

Almost all tourism variables showed a statistically significant relationship with GDP (p-value < 0.05). This suggests that Armenia's GDP is meaningfully shaped by past tourism activity. In particular,

Inbound_Tourists → GDP (p = 0.0000).

Spending_per_Tourist → GDP (p = 0.0019).

Travel_Agencies_Revenue → GDP (p = 0.0000).

Hotels_Count → GDP (p = 0.0072).

Air_Transport → GDP (p = 0.0000).

Tourism_Export_Share → GDP (p = 0.0048).

Total_Beds_in_Hotels → GDP (p = 0.0007).

The very low p-values of these variables (for example, Inbound_Tourists → GDP with p = 0.0000) indicate that they are powerful determinants of GDP formation.

The main impacts with a 1-year lag are presented. The key results of the model are (Table 1):

- Inertia of Previous Year's GDP: The previous year's GDP (GDP_billion_dram) has a significant positive impact on the current GDP ($p$ = 0.043), indicating that economic growth has a certain stability and inertia.

- Role of Tourism Exports: A one-unit increase in the share of tourism exports (Tourism_Export_Share) has a significant positive impact on GDP ($p$ = 0.046). This means that the


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inflow of foreign currency from tourism directly stimulates Armenia's GDP, which is important for small and developing economies.

- Importance of Infrastructure: The increase in the number of hotels (Hotels_Count) has a significant positive impact on GDP ($p = 0.011$). This result emphasizes that the development of tourism infrastructure (especially hotels) not only serves tourists but also has a multiplicative effect on the economy, creating jobs and stimulating the development of other sectors.

- Insignificance of Air Transport: Interestingly, despite Granger analysis showing a causal link, the VAR model indicated that the number of air transports (Number of Air Transports) and air arrivals (Number of Air Arrivals) have an insignificant impact on GDP. This could be due to these variables reflecting the level of GDP rather than causing it, or their impact may be more complex and indirect.

- Hotel Infrastructure and Export Share as Long-Term Factors. Hotel infrastructure and the share of exports are identified as factors in tourism that have a long-term impact on GDP.

According to the results of the impulse response, a positive shock to the proportion of tourism exports causes a notable short-term rise in GDP, with the effect progressively diminishing over time. Similarly, shocks to the number of hotels generate a positive impact on GDP. Conversely, growth in GDP itself stimulates the expansion of hotel infrastructure, reflecting a feedback mechanism between macroeconomic performance and sectoral development. Overall, the results suggest that tourism's influence on GDP is transmitted primarily through indirect channels and unfolds progressively, rather than exerting an immediate and direct effect.

The results of the regional tourism assessments and the results of the territorial structure of specialization (LQ) for 2023 revealed a multi-layered picture and uneven distribution across regions of Armenia. For instance, in Yerevan, the Rev share ≈ 0.816, Tour share ≈ 0.912, LQ ≈ 0.895. Although Yerevan generates significant revenues, it provides below-average hotel revenue per tourist. This can be explained by the wide network of other accommodation types, as well as the predominance of short-term visits. The index for the Kotayk region is LQ ≈ 14.1. This is the highest specialization in Armenia, which represents the dominance of resort, wellness, and premium services in this market.

The index of LQ ≈ 1.3–1.4 is observed in Tavush, Vayots Dzor, and Shirak regions. This is a result of the effective increase in revenue from eco-, wine-, and cultural tourism under relatively small tourist flows. In Syunik region, the indicator is quite small LQ ≈ 0.62. Here, the opposite picture is observed: high tourist flows, but weak monetization. This is mainly explained by infrastructural and portfolio constraints.

As for the level of regional concentration of the tourism market, the picture is as follows: in 2023, the hotel market has a unipolar structure. The CR1 indicator in Yerevan is about 82% – the vast majority of hotel revenues are generated here. As for CR4, Yerevan city, Kotayk, Tavush and Gegharkunik regions together generate about 94% of hotel revenues. The HHI index is 0.70, which indicates a very high concentration of this submarket. These values indicate that the market is centralized, with one pole, the city of Yerevan, shaping the architecture of the offer. This significantly weakens the spread of tourism's economic impact across regions.

The results of the assessment of the responsiveness of regional GDP to a 1 percent increase in hotel revenue (elasticity coefficients) are shown in Table 2.

**Table 1.** Results of VAR estimation

| Variable | coefficient | p-value | Comments |
|---|---|---|---|
| GDP in_billion_dram | 0.60 | 0.043 | Inertial effect: a trend of stable growth |
| Inbound_Tourists | –0.000097 | 0.036 | Weak negative effect: large numbers by themselves do not serve as a stimulus |
| Travel_Agencies_Revenue | –0.034292 | 0.046 | Market revenues have a mild negative effect, possibly due to heightened competition |
| Hotels_Count | +3.598881 | 0.011 | Significant positive effect: infrastructure investment stimulates the economy |
| Tourism_Export_Share | +18.99 | 0.046 | Strong positive effect: foreign currency inflow |

**Table 2.** Average elasticity of regional GDP with respect to hotel revenue by region

| Region | Average ε |
|---|---|
| Yerevan | 0.42 |
| Aragatsotn | 0.31 |
| Ararat | 0.25 |
| Armavir | 0.15 |
| Gegharkunik | 0.22 |
| Lori | –0.21 |
| Kotayk | 0.67 |
| Shirak | 0.37 |
| Syunik | 0.58 |
| Vayots Dzor | 0.85 |
| Tavush | 0.50 |

The assessment results show that the economy of Vayots Dzor is the most sensitive to changes in hotel revenues ($\varepsilon \approx 0.85$); here, the growth of hotel revenues is almost proportionally reflected in GDP. The economies of Kotayk ($\varepsilon \approx 0.67$) and Syunik ($\varepsilon \approx 0.58$) also exhibit high responsiveness to hotel revenues, with tourism as one of the main driving forces of the economy. The economies of Yerevan, Shirak, and Tavush have Medium responsiveness ($\varepsilon \approx 0.37$–$0.50$); the economies of Armavir and Ararat have weak responsiveness ($\varepsilon \approx 0.15$–$0.25$). In the case of the former, this is due to the diversification of the economies, and in the case of the latter, to the small representation of tourism. Unlike other regions, the response in Lori is negative ($\varepsilon \approx -0.21$), which means that GDP changes have often been in the opposite direction to changes in hotel revenues.

The national average elasticity coefficient is estimated to be around 0.34, which is comparable to the results of previous similar studies. The latter show that the impact of tourism on regional GDP is usually small but positive. For example, in the IMF working paper on Small Developing States (Rustomjee, 2022) it was estimated that, for Cape Verde, the short-run elasticity of GDP with respect to tourism revenues is around 0.4.

Future research may extend the analysis by incorporating panel data across comparable transition economies or by applying spatial econometric models to examine cross-regional spillover effects of tourism development.

*H1: GDP is positively and statistically significantly impacted by tourism development.*

While the Granger causality tests show that the majority of tourist variables have a substantial impact on economic growth, the VAR estimation indicates that tourism exports and hotel infrastructure have considerable positive effects on GDP. Positive shocks to tourism exports and hotel capacity result in long-term, steady gains in GDP, as the impulse response analysis further shows.

*H2: There is a reciprocal relationship between tourism and economic growth.*

According to the Granger causality results, GDP has a considerable impact on a number of factors associated to tourism. This implies the presence of a feedback mechanism whereby economic growth fosters the rise of tourism by enhancing infrastructure, investment, and service capacity, and tourism in turn fosters additional economic expansion.

*H3: The economic effects of tourism differ across regions due to differences in tourism specialization and infrastructure.*

Significant variation in the economic impact of tourism is revealed by the regional analysis. While Armavir, Ararat, and particularly Lori show weaker or negative reactions, higher elasticity coefficients in Vayots Dzor, Kotayk, and Syunik suggest a heavier reliance on tourism. The unequal regional distribution of tourism benefits throughout Armenia is confirmed by the LQ, concentration, and elasticity results.

The findings have important implications for tourism policy in Armenia and other small developing economies. They indicate that increasing the number of visitors alone is not enough to maximize tourism's contribution to economic growth. Greater emphasis should be placed on improving tourism infrastructure, expanding tourism exports, and developing high-value tourism services. These findings are consistent with earlier studies that identify tourism infrastructure and tourism exports as key drivers of economic growth, while also showing that tourism's economic effects differ considerably across regions. One limitation of this study is that it focuses only on Armenia. Future research could broaden the analysis by including comparable developing economies or by applying spatial econometric approaches to examine regional spillover effects of tourism development.


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## CONCLUSION

This study examined the dynamic impact of tourism on the economic development of the Republic of Armenia, with the primary aim of identifying the functional relationships between key sectoral indicators and national GDP. The study's findings support the suggested research hypotheses and show that tourism plays a significant role in Armenia's economic growth. The results demonstrate that tourism boosts GDP through infrastructure development and tourism exports, that tourism and economic growth are mutually reinforcing, and that the degree of tourism's economic impact varies by region based on infrastructure and tourism specialization.

The empirical findings, derived from VAR and Granger causality analyses, confirm a direct and significant relationship between tourism revenues and macroeconomic performance, specifically demonstrating that while infrastructure and service exports play a decisive role in shaping growth, the volume of inbound tourists alone does not stimulate measurable GDP expansion without high-value integration. Furthermore, the spatial assessment reveals a strong market concentration in Yerevan and a paradoxical regional dynamic where the ability of local economies to absorb tourism value depends heavily on their specific structural characteristics.

Although not all tourism-related measures contribute equally, the results demonstrate that tourism has a significant impact on Armenia's economy. The data show that tourism exports and infrastructure are especially crucial for promoting GDP growth. By promoting investment, generating foreign exchange inflows, and bolstering related economic sectors, improvements in hotel infrastructure and the rising share of tourism exports among all service exports have a favorable impact on economic activity. However, the results show that a mere increase in visitor numbers does not always lead to stronger economic growth. This implies that visitor numbers alone are not as important to tourism's economic efficacy as the caliber and value produced by its offerings.

The study also demonstrates a reciprocal relationship between tourism and economic expansion. While tourism contributes to GDP growth, broader economic development fosters tourism growth through infrastructure investment and increased economic capacity. This exchange demonstrates how tourism and the overall economy are mutually reinforcing.

Significant regional variations in Armenia's tourist development were found by the regional analysis. While other areas show greater expertise and a greater response to tourism expansion, Yerevan continues to get a disproportionate share of tourism profits. In particular, areas like Syunik, Kotayk, and Vayots Dzor have a somewhat higher economic sensitivity to tourism-related income. However, in some regions, limited infrastructure and weaker monetization reduce the overall economic benefits of tourism.

Overall, the findings suggest that the long-term contribution of tourism to Armenia's economic development depends not simply on increasing tourist arrivals, but on improving tourism infrastructure, expanding high-value tourism services, and encouraging more balanced regional development. Therefore, future tourism policy should place greater emphasis on infrastructure modernization, regional diversification, and the development of tourism segments that generate higher added value and stronger local economic effects.

This paper contributes to the literature by providing a combined macroeconomic and regional assessment of tourism development in Armenia using modern econometric approaches. Future studies may further expand the analysis through comparative regional models, panel data techniques, or spatial econometric methods to better understand long-term regional spillover effects and the sustainability of tourism-led growth.

## AUTHOR CONTRIBUTIONS

Conceptualization: Susanna Aghajanyan, Hovhannes Karapetyan, Melanya Gharagyozyan, Albert Hayrapetyan.
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Writing – review & editing: Susanna Aghajanyan, Melanya Gharagyozyan, Meri Badalyan, Albert Hayrapetyan.

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