

ECONOMIC EFFECTS OF TOURISM IN NORTH MACEDONIA: ANALYSIS OF TOURISM REVENUES AND THEIR CONTRIBUTION TO GDP

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Abstract

This paper examines the economic significance of tourism in North Macedonia by analysing the relationship between key tourism indicators and their contribution to the national economy. The main objective of the research is to determine the role of tourism activity in generating economic effects, particularly through tourism revenues, tourism demand, and their influence on the contribution of tourism to gross domestic product (GDP). The analysis is based on secondary statistical data covering the period 2011–2025, obtained from relevant national and international statistical sources. Several quantitative methods are applied in the study, including descriptive statistics, correlation analysis, regression analysis, and trend analysis.

The results of the research indicate a significant relationship between tourism revenues and the contribution of tourism to GDP. The regression analysis shows that tourism revenues have a statistically significant and positive impact on the economic importance of tourism, confirming that the growth of tourism activity directly contributes to the country's economic development. Furthermore, the trend analysis indicates a gradual increase in tourism revenues in recent years, suggesting a strengthening of the tourism sector.

The findings confirm the importance of tourism as a significant economic sector that contributes to revenue generation, economic growth, and job creation. The research provides useful insights into the economic effects of tourism development and may serve as a basis for designing policies aimed at the sustainable development of tourism in North Macedonia.

Key words: Tourism demand, economic impact, tourism development, tourism indicators, economic growth.

JEL Classification: L83, Z32

INTRODUCTION

Tourism represents one of the most dynamic economic activities in the modern global economy and plays a significant role in stimulating economic growth, regional development, and job creation. In recent decades, the tourism sector has experienced continuous growth and has emerged as an important source of income for many national economies (UN Tourism, 2023). Through the generation of direct and indirect economic effects, tourism contributes to the increase of gross domestic product (GDP), the development of infrastructure, the growth of employment, and the improvement of the balance of payments of countries (Buhalis & Amaranggana, 2015).

In this context, tourism is becoming increasingly important for the economy of North Macedonia. As a service activity with significant development potential, the tourism sector contributes to the generation of foreign exchange earnings, stimulates local economic development, and supports job creation. At the same time, the development of tourism creates multiplier effects across several economic sectors, including transport, hospitality, trade, and other service activities (Gretzel et al., 2015).

The aim of this paper is to analyse the economic importance of tourism in North Macedonia by examining the relationship between key tourism indicators and their contribution

to the national economy. The research focuses on several key indicators, including the number of tourists, the number of overnight stays, tourism revenues, and the contribution of tourism to gross domestic product (GDP).

The research is based on the analysis of secondary statistical data covering the period from 2011 to 2025, obtained from relevant national and international statistical sources. The study applies several quantitative analytical methods, including descriptive statistics, correlation analysis, regression analysis, and trend analysis, in order to determine the economic impact of the tourism sector and its role in the country's economic development.

LITERATURE REVIEW

Tourism represents one of the most significant service industries in the contemporary global economy and plays an important role in stimulating economic growth, regional development, and job creation. In recent decades, the tourism sector has experienced continuous growth and has emerged as an important source of income for many national economies. According to data from UN Tourism, tourism makes a significant contribution to economic activity and the generation of foreign exchange earnings in many countries worldwide (UN Tourism, 2023).

In the scientific literature, tourism is frequently emphasized as a sector that generates significant economic effects, including direct, indirect, and induced impacts on economic development. The development of the tourism industry contributes to the increase of gross domestic product, the development of infrastructure, and the stimulation of investments in various economic sectors (Ivanov & Webster, 2013). In addition, tourism activity has a significant influence on the development of related service industries, such as transport, hospitality, and trade (Cooper et al., 2008).

Contemporary research indicates that the development of tourism is closely linked to processes of globalization, technological advancement, and the digitalization of tourism services. According to Buhalis and Law (2008), information and communication technologies play a key role in the transformation of the tourism sector and in enhancing the competitiveness of tourist destinations. In this context, modern tourist destinations are increasingly oriented towards the adoption of innovative and digital solutions in order to improve the management of tourism resources and enhance the overall tourism experience (Gretzel et al., 2015).

In addition, a large body of research emphasizes that the tourism sector plays a significant role in job creation and in stimulating local economic development. The development of tourism creates new economic opportunities, contributes to economic diversification, and enables improvements in the economic structure of many countries (Hall & Page, 2014).

Based on the existing literature, it can be concluded that tourism represents an important factor in the economic development of national economies. Therefore, the analysis of the economic effects of tourism activity represents an important topic in contemporary academic research, particularly in the context of countries with developing tourism potential.

MATERIAL AND METHODS

The research in this paper is based on a quantitative analysis of secondary statistical data in order to examine the economic significance of tourism in North Macedonia and its contribution to the national economy. The analysis covers the period from 2011 to 2025, which allows an assessment of the dynamics of tourism indicators and their influence on economic processes.

Within the scope of the research, several key tourism indicators are analysed, including the number of tourists, the number of overnight stays, tourism revenues, and the contribution of tourism to gross domestic product (GDP). Data on tourism movements were obtained from the State Statistical Office of the Republic of North Macedonia, while data on tourism revenues and economic indicators were obtained from the National Bank of the Republic of North Macedonia and the World Bank database.

Several statistical methods were applied in the research in order to analyse in greater detail the economic effects of tourism activity. Descriptive statistics were first used to describe the main characteristics of the analysed variables. This was followed by correlation analysis to examine the degree of relationship between the tourism indicators and their contribution to the economy. In addition, multiple linear regression analysis was applied to determine the impact of tourism indicators on the contribution of tourism to gross domestic product. To illustrate the movement of the key indicators during the analysed period, trend analysis was also used.

Data processing and statistical analysis were carried out using the statistical software IBM SPSS, which enables the application of various statistical techniques for the analysis of economic and social data.

In addition to the aforementioned indicators, employment in the tourism sector was also considered in the study as an important economic indicator. However, it should be noted that the available statistical data on employment in tourism are not available for the entire analysed period starting from 2011. Due to this limitation, the analysis of employment is based on data for a shorter time period for which officially published statistical information exists. Despite this limitation, the analysis allows the identification of the main trends in employment in the tourism sector.

By applying the aforementioned analytical methods, it is possible to obtain a systematic understanding of the economic effects of tourism activity and its contribution to the economic development of North Macedonia.

RESULTS AND DISCUSSION

In order to examine the dynamics of the development of the tourism sector in North Macedonia, the main tourism indicators for the analysed period are presented below. The table includes data on the number of tourists, the number of overnight stays, tourism revenues, employment in the tourism sector, and the contribution of tourism to gross domestic product.

Table 1. Main tourism indicators in the Republic of North Macedonia (2011–2025)

Year	Tourists		Overnight stays		Revenue s (million US\$)	Employment t (persons)	Tourism contribution n GDP (%)
	domestic	foreign	domestic	foreign			
2011	300923	290445	1325413	690080	91,15	-	0,87
2012	294943	320908	1252247	761784	96,14	-	0,99
2013	284819	367369	1181446	826323	102,48	-	0,95
2014	290379	391796	1174655	866834	110,1	-	0,97
2015	311984	445611	1269716	969396	94,71	-	0,94

201 6	324376	46439 6	1302197	979730	89,98	-	0,84
201 7	348519	58356 6	1382582	122020 2	103,59	98153	0,92
201 8	404042	68586 5	1625992	146023 0	105,24	102788	0,83
201 9	413080	71689 7	1658522	151230 1	101,94	67916	0,81
202 0	355178	11232 1	1413110	240103	90,57	113751	0,73
202 1	396578	27797 7	1609930	634395	139,93	93917	1
202 2	417615	51328 4	1648828	109456 2	162,19	97966	1,16
202 3	420808	67582 0	1684290	130998 0	161,65	106993	1,02
202 4	414054	75256 9	1704599	140706 9	192,74	110243	1,14
202 5	425486	80978 8	1625437	148121 6	170,02	122834	-

Source: Author's calculation based on data from:

- State Statistical Office of the Republic of North Macedonia
- National Bank of the Republic of North Macedonia
- World Bank – World Development Indicators

Table 1 presents the main tourism indicators in the Republic of North Macedonia for the period 2011–2025, including the number of domestic and foreign tourists, the number of overnight stays, tourism revenues, employment in the tourism sector, and the contribution of tourism to gross domestic product (GDP). The analysis of the data indicates a gradual increase in tourism activity during the analysed period, which is reflected in the growth in the number of tourists and overnight stays.

The number of foreign tourists shows a significant increase during the analysed period, indicating the growing attractiveness of North Macedonia as a tourist destination. A similar trend is observed in the number of overnight stays, particularly among foreign tourists, which indicates increased tourism activity and longer stays of visitors. On the other hand, tourism revenues show certain fluctuations, but an overall upward trend can be observed, especially in the last years of the analysed period.

A particularly noticeable decline in tourism activity is observed in 2020, which can be associated with the global health and economic crisis caused by the COVID-19 pandemic. In the following years, a gradual recovery of the tourism sector can be observed, reflected in the growth of tourism revenues and the number of tourists.

Regarding the contribution of tourism to gross domestic product, the data indicate moderate variations during the analysed period, while in recent years a tendency of increase can be observed. These results indicate that tourism represents an important economic sector that contributes to economic activity and the development of the national economy.

In order to gain a clearer understanding of the main characteristics of the analysed tourism indicators, the descriptive statistics of the variables are presented below.

Table 2. Descriptive statistics of tourism indicators

	N	Minimum	Maximum	Mean	Std. Deviation
Foreign tourists	15	112321	809788	493907.47	204933.229
Foreign nights	15	240103	1512301	1030280.33	370757.438
Receipts	15	89,98	192,74	120.8287	34.56002
Tourism gdp	14	0,73	1,16	0,9407	0.12099

Source: Author's calculations based on data from:

- State Statistical Office of the Republic of North Macedonia
- National Bank of the Republic of North Macedonia
- World Bank – World Development Indicators

Table 2 presents the descriptive statistics of the analysed tourism indicators in the Republic of North Macedonia. The average number of foreign tourists during the analysed period amounts to 493,907, indicating significant tourism activity. At the same time, the average number of overnight stays amounts to 1,030,280, suggesting a relatively longer stay of tourists and stable tourism demand.

Tourism revenues show an average value of 120.83 million, with a minimum value of 89.98 and a maximum value of 192.74, indicating considerable fluctuations in tourism-related economic activity. The average contribution of tourism to gross domestic product amounts to 0.94%, indicating that the tourism sector has a moderate but significant contribution to the national economy.

Table 3. Pearson correlation analysis of selected tourism indicators and the contribution of tourism to GDP

Correlations

		For_tourists	For_nights	Receipts	Tourism_GDP
For_tourists	Pearson Correlation	1	.986***	.574*	0,298
	Sig. (2-tailed)		0,000	0,025	0,300
	N	15	15	15	14
For_nights	Pearson Correlation	.986***	1	0,479	0,262
	Sig. (2-tailed)	0,001		0,071	0,366
	N	15	15	15	14
Receipts	Pearson Correlation	.574*	0,479	1	.814***
	Sig. (2-tailed)	0,025	0,071		0,001
	N	15	15	15	14
Tourism_GDP	Pearson Correlation	0,298	0,262	.814***	1
	Sig. (2-tailed)	0,300	0,366	0,001	
	N	14	14	14	14

Source: Author's calculations based on data from:

- State Statistical Office of the Republic of North Macedonia
- National Bank of the Republic of North Macedonia
- World Bank – World Development Indicators

The results of the Pearson correlation analysis indicate the existence of statistically significant relationships among the analysed tourism indicators. The strongest positive correlation was found between the number of foreign tourists and the number of overnight stays generated by foreign tourists ($r = 0.986$; $p < 0.001$), indicating that the increase in the number of foreign tourists directly influences the growth of tourism overnight stays. This result is expected, considering that a larger number of tourists generally implies a higher number of overnight stays realised in tourism accommodation facilities.

In addition, a moderate positive correlation was identified between the number of foreign tourists and tourism revenues ($r = 0.574$; $p = 0.025$). This result indicates that an increase in international tourism demand has a positive impact on tourism revenues, confirming the economic importance of foreign tourism for the tourism sector.

A particularly significant result is the strong positive correlation between tourism revenues and the contribution of tourism to gross domestic product ($r = 0.814$; $p < 0.001$). This finding suggests that the growth of tourism revenues significantly contributes to the increase in the economic contribution of the tourism sector to the national economy.

On the other hand, the correlation between the number of foreign tourists and the contribution of tourism to GDP is relatively weak ($r = 0.298$; $p = 0.300$), indicating that the number of tourists alone is not a sufficient indicator of the economic impact of tourism. Instead, greater importance is attributed to the revenues generated from tourism activities.

Based on the obtained results, it can be concluded that the economic contribution of tourism in North Macedonia is largely associated with the generated tourism revenues, while the number of tourists and overnight stays have an indirect impact through the generation of these revenues.

The results of the analysis confirm the significant role of tourism revenues as a key factor in the economic impact of tourism and its contribution to GDP.

In order to examine the economic impact of tourism indicators on the contribution of tourism to gross domestic product, a multiple linear regression analysis was conducted. The results of the regression analysis are presented in Table 4.

Table 4. Regression analysis of the economic impact of tourism

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.817 ^a	0,668	0,608	0,07579

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	Collinearity Statistics	
	B	Std. Error	Beta	t		Tolerance	VIF
1 (Constant)	0,603	0,083		7,236	<0,001		
For_nights	-2,570E-8	0,000	-0,077	-0,406	0,693	0,839	1,191
Receipts	0,003	0,001	0,845	4,457	<0,001	0,839	1,191

Source: Author's calculation based on data from:

- State Statistical Office of the Republic of North Macedonia
- National Bank of the Republic of North Macedonia
- World Bank – World Development Indicators

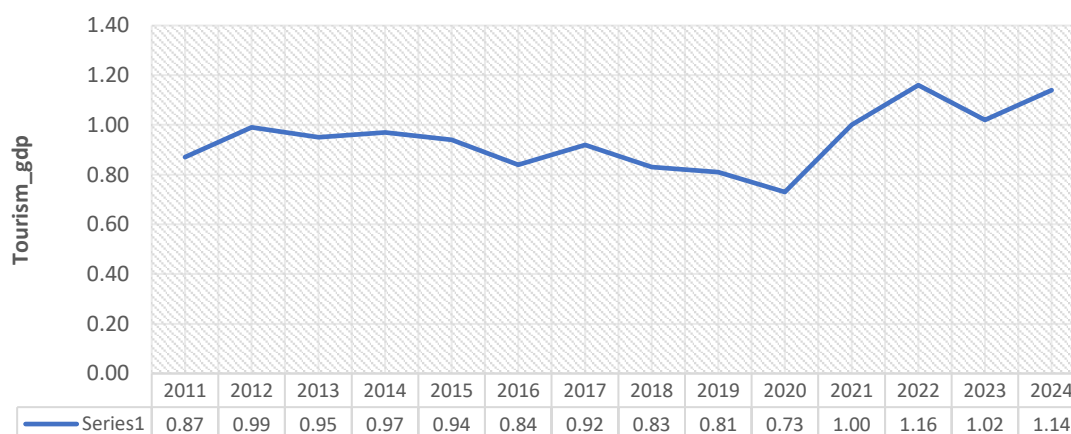
The results of the multiple linear regression analysis indicate that the analysed tourism indicators have a significant impact on the contribution of tourism to gross domestic product. The correlation coefficient is $R = 0.817$, indicating a relatively strong relationship between the dependent variable and the independent variables. The coefficient of determination ($R^2 = 0.668$) shows that approximately 66.8% of the variation in the contribution of tourism to GDP can be explained by the analysed tourism indicators.

The results indicate that tourism revenues have a statistically significant and positive impact on the contribution of tourism to GDP ($\beta = 0.845$; $p < 0.001$), suggesting that the growth of tourism revenues directly contributes to the increase in the economic importance of the tourism sector. On the other hand, the number of foreign overnight stays does not show a statistically significant impact on GDP ($p = 0.693$), indicating that the economic impact of tourism is largely reflected through the generated tourism revenues.

Overall, the results of the regression analysis confirm that tourism revenues represent a key economic factor determining the contribution of tourism to the national economy.

In order to illustrate the dynamics of tourism revenues in the Republic of North Macedonia, the trend of tourism revenues during the analysed period is presented below.

Figure 1. Trend of tourism revenues in the Republic of North Macedonia (2011–2025)



Source: Author's calculations based on data from:

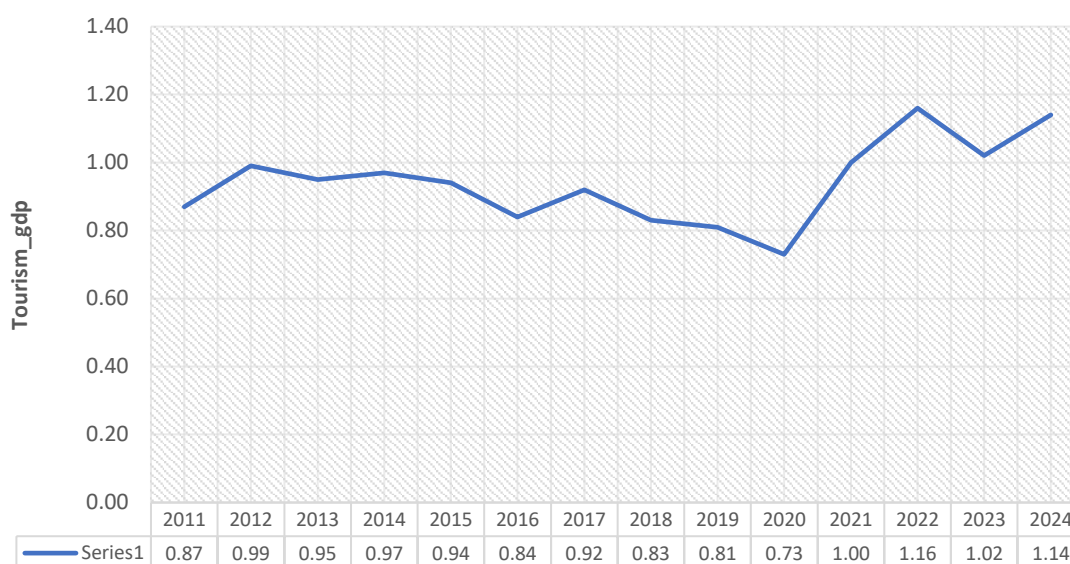
- State Statistical Office of the Republic of North Macedonia
- National Bank of the Republic of North Macedonia

The figure illustrates the trend of tourism revenues in the Republic of North Macedonia during the period from 2011 to 2025. In the initial part of the analysed period, a gradual increase in tourism revenues can be observed, reaching a relatively high level in 2014. During the period from 2015 to 2017, certain fluctuations and a moderate decline in revenues are evident, indicating the sensitivity of the tourism sector to economic and market factors.

The most significant decline in tourism revenues was recorded in 2020, which can be directly associated with the global health crisis caused by the COVID-19 pandemic and the restrictions on international travel. In the post-pandemic period, a strong recovery of the tourism sector can be observed, with tourism revenues showing significant growth between 2021 and 2024. This trend indicates a gradual stabilization and increase in tourism activity, further confirming the importance of tourism as a significant factor in the country's economic development.

In order to illustrate the dynamics of the contribution of tourism to gross domestic product in the Republic of North Macedonia, the trend of tourism's contribution to GDP during the analysed period is presented below.

Figure 2. Trend of tourism contribution to GDP in the Republic of North Macedonia (2011–2024)



Source: Author's calculations based on data from:

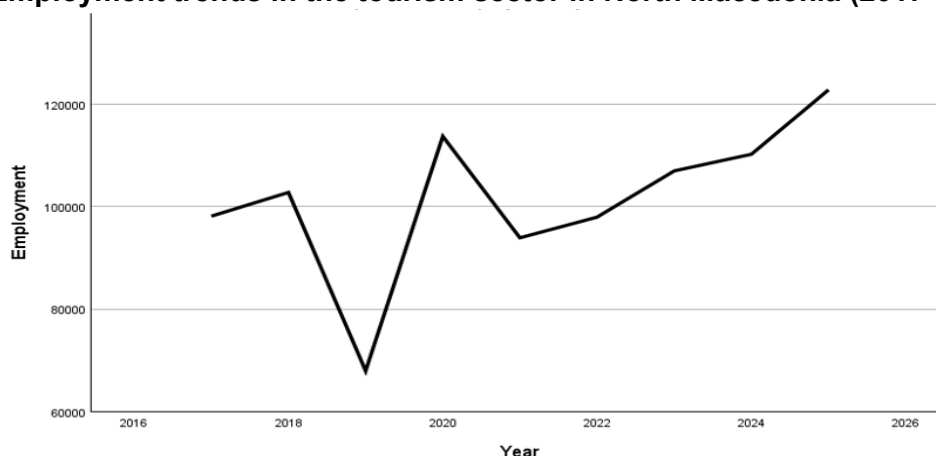
- National Bank of the Republic of North Macedonia
- World Bank – World Development Indicators

The figure illustrates the trend of tourism's contribution to gross domestic product in the Republic of North Macedonia during the analysed period. The results indicate relatively stable participation of the tourism sector in the national economy, with moderate fluctuations over the years. The most pronounced decline was recorded in 2020 as a result of the global COVID-19 pandemic, which significantly affected tourism activity and international travel.

In the post-pandemic period, a gradual recovery and growth in the economic contribution of tourism can be observed, indicating increased tourism demand and improved performance of the tourism sector.

In order to analyse the dynamics of employment in the tourism sector in the Republic of North Macedonia, the trend of employment during the analysed period is presented below.

Figure 3. Employment trends in the tourism sector in North Macedonia (2017–2025)



Source: Author's calculations based on data from:

- State Statistical Office of the Republic of North Macedonia
- National Bank of the Republic of North Macedonia

The analysis of employment trends in the tourism sector in North Macedonia indicates certain fluctuations during the analysed period. The data show that the number of employees in tourism is closely related to the dynamics of tourism activity and the overall economic conditions in the country. A particularly noticeable decline in employment was recorded in 2020, which can be associated with the negative economic effects of the COVID-19 pandemic on the tourism sector.

In the following years, a gradual recovery and renewed growth in the number of employees can be observed, indicating a relatively rapid adaptation of the tourism sector to new market conditions. These results confirm that tourism represents an important generator of employment and plays a significant role in supporting economic activity and the development of the national economy.

DISCUSSION AND RECOMMENDATIONS

The results of the conducted analysis indicate that the tourism sector plays a significant role in the economic development of North Macedonia. The analysis of tourism indicators shows that during the analysed period there is a tendency towards a gradual increase in tourism activity, reflected in the growth of the number of foreign tourists, the number of overnight stays, and tourism revenues. The increase in foreign tourism is particularly significant, as it represents an important source of foreign exchange earnings and has a direct impact on the country's economic activity.

In addition, the obtained results are consistent with previous research indicating that tourism revenues represent one of the most important economic indicators for assessing the impact of tourism on the national economy (Ivanov & Webster, 2013). Similar results have been observed in other studies showing that the growth of tourism activity has a positive impact on economic growth and the development of tourism destinations (Dwyer et al., 2010).

These findings further confirm the importance of tourism revenues as a key factor in the economic contribution of tourism and its participation in gross domestic product.

The results of the correlation analysis indicate a strong relationship between tourism revenues and the contribution of tourism to gross domestic product. This result suggests that the economic importance of tourism does not depend solely on the number of tourists, but rather on the economic value generated through tourism expenditure. Therefore, it can be

concluded that policies aimed at increasing tourism revenues may have a significant impact on economic growth and development.

The regression analysis further confirms that tourism revenues represent a key factor in explaining the economic importance of tourism. Although the number of overnight stays and tourists are important indicators of tourism activity, their impact on the economic effects of tourism is indirect and is most often realized through the generation of tourism revenues.

Based on the obtained results, several recommendations can be proposed that could contribute to the further development of the tourism sector in North Macedonia. First, it is necessary to encourage the development of tourism products with higher added value, with the aim of increasing tourism spending and tourism revenues. In addition, improving tourism infrastructure and enhancing the quality of tourism services are important, which may contribute to greater competitiveness of the tourism sector.

It is also necessary to develop strategies aimed at attracting tourists with higher purchasing power, as well as to encourage the development of various forms of tourism, such as cultural, rural, and eco-tourism. These activities can contribute to the diversification of the tourism offer and to the sustainable development of the tourism sector.

Future research could benefit from analysing additional economic indicators, such as tourism expenditure per tourist, investments in tourism, and the regional distribution of tourism activity. Such analyses would enable a more detailed understanding of the economic effects of tourism and its importance for the national economy.

CONCLUSION

This paper analysed the economic importance of tourism in North Macedonia by examining the relationship between key tourism indicators and their contribution to the national economy. The analysis was based on secondary statistical data for the period 2011–2025 and included the application of several quantitative methods such as descriptive statistics, correlation analysis, and regression analysis.

The results of the research indicate that the tourism sector has experienced gradual growth during the analysed period, reflected in the increase in the number of tourists, overnight stays, and tourism revenues. Particularly significant is the growth in the number of foreign tourists, which indicates the increasing international attractiveness of North Macedonia as a tourist destination.

The correlation analysis revealed a strong positive relationship between tourism revenues and the contribution of tourism to gross domestic product. This result suggests that the economic impact of tourism is largely reflected through the revenues generated from tourism activities. The regression analysis further confirmed that tourism revenues have a statistically significant and positive influence on the economic contribution of tourism to GDP.

Despite the negative effects of the COVID-19 pandemic in 2020, the trend analysis indicates a relatively rapid recovery of the tourism sector in the following years. This demonstrates the adaptability and potential of the tourism industry to continue contributing to the country's economic development.

Based on the obtained results, it can be concluded that tourism represents an important economic sector that contributes to revenue generation, economic growth, and job creation. Therefore, the development of the tourism industry should be supported through appropriate policies and strategies aimed at increasing the competitiveness of the tourism offer and ensuring the sustainable development of tourism in North Macedonia.

Despite the obtained results, it should be emphasized that the research has certain limitations. The analysis is based on secondary statistical data and includes a limited number

of economic indicators, which may affect the overall assessment of the economic effects of tourism. Future research could include additional economic and social indicators, as well as more detailed regional analyses in order to provide a deeper understanding of the impact of tourism on economic development.

REFERENCES

1. Buhalis, D., & Amaranggana, A. (2015). Smart tourism destinations. In I. Tussyadiah & A. Inversini (Eds.), *Information and Communication Technologies in Tourism 2015* (pp. 553–564). Springer.
2. Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet—The state of eTourism research. *Tourism Management*, 29(4), 609–623.
3. Cooper, C., Fletcher, J., Fyall, A., Gilbert, D., & Wanhill, S. (2008). *Tourism: Principles and practice* (4th ed.). Pearson Education.
4. Dwyer, L., Forsyth, P., & Dwyer, W. (2010). *Tourism economics and policy*. Channel View Publications.
5. Frechtling, D. (2013). The economic impact of tourism: Overview and examples of macroeconomic analysis. *Tourism Analysis*, 18(2), 151–156.
6. Gretzel, U., Sigala, M., Xiang, Z., & Koo, C. (2015). Smart tourism: Foundations and developments. *Electronic Markets*, 25(3), 179–188.
7. Gössling, S., Scott, D., & Hall, C. M. (2021). Pandemics, tourism and global change. *Journal of Sustainable Tourism*, 29(1), 1–20.
8. Hall, C. M., & Page, S. J. (2014). *The geography of tourism and recreation: Environment, place and space* (4th ed.). Routledge.
9. Ivanov, S., & Webster, C. (2013). Tourism's impact on growth: The role of globalization. *Annals of Tourism Research*, 41, 231–236.
10. Page, S. J., & Connell, J. (2020). *Tourism: A modern synthesis* (5th ed.). Routledge.
11. Sigala, M. (2018). Social media and customer engagement in the tourism industry. *Tourism Management*, 66, 86–97.
12. Sharpley, R. (2015). *Tourism: A vehicle for development?* Channel View Publications.
13. Stynes, D. J. (1997). Economic impacts of tourism: A handbook for tourism professionals. *Michigan State University*.
14. Tussyadiah, I., & Inversini, A. (2015). *Information and Communication Technologies in Tourism 2015*. Springer.
15. UN Tourism. (2023). *World Tourism Barometer*. UN Tourism.
16. UN Tourism. (2024). *International tourism highlights*. UN Tourism.
17. World Bank. (2023). *World development indicators*. World Bank. <https://data.worldbank.org>
18. World Economic Forum. (2022). *Travel and tourism development index*. World Economic Forum.
19. World Travel & Tourism Council. (2023). *Economic impact report*. WTTC.
20. Xiang, Z., & Fesenmaier, D. (2017). Big data analytics, tourism design and smart tourism. *Annals of Tourism Research*, 63, 299–301.
21. Државен завод за статистика на Република Северна Македонија. (2024). Туризам – статистички податоци. <https://www.stat.gov.mk>
22. Народна банка на Република Северна Македонија. (2024). Статистика на платниот биланс и туристички приходи. <https://www.nbrm.mk>