The development of the tourism sector in Algeria and its impact on economic growth during the period 2005-2021

Chirouf fadila*

Larbi Ben Mhidi University Oum El Bouaghi, (Algeria)

fadila.chirouf@univ-oeb.dz

Bobah Alia

Abdelhamid Mehri University Constantine2, (Algeria)

alia.bobah@univ-constantine2.dz

Abstract :

This study aims to analyze the development of the tourism sector and the economic growth rate in Algeria and their development prospects, in addition to measuring the impact of the tourism sector on economic growth in Algeria in the period from 2005 to 2021. The results concluded that there is a simple effect of the tourism sector (number of arrivals and tourism revenues) on Economic growth in Algeria during the period studied. This confirms the weak development performance of the tourism sector in the country, which calls for improving tourism development strategies and increasing attention to it. The study suggests the necessity of completing guidelines for developing tourism infrastructure and enhancing financing for tourism projects to improve the economic performance of the sector in Algeria.

---

* Chirouf fadila

1. *Introduction*

Tourism is considered one of the important and fundamental sectors in the economy, as it represents one of its components, engines, and a source of economic development in many countries. It contributes to job creation, attracts financial revenues, improves the balance of payments, as well as achieving growth and economic diversification... Indicators show its growth and development at rates that surpass the growth of other phenomena and industries. Therefore, it has become a significant sector in the economy for developing countries like Egypt, Tunisia, and Morocco... as well as developed countries like France and Germany... Based on this, we will examine the impact of the tourism sector in Algeria on economic growth.

1.2 The Problem Statement:

What is the extent of the impact of the tourism sector on economic growth in Algeria during the period 2005 - 2021? And based on the main question, the following sub-questions can be posed:

- What is the reality of the development of the tourism sector in Algeria during 2005-2021?
- What is the reality of the development of Algerian economic growth rates during 2005-2021?
- To what extent does the tourism sector contribute to economic growth in Algeria?

1.3 The Hypotheses:

This study is based on three fundamental hypotheses as follows:

- The growth and development of the tourism sector in Algeria are weak, attributed to the inadequacy of the adopted tourism development strategy, and the development of the tourism sector depends on the government's interest in this sector.
- The development of the growth rate in Algeria is closely linked to the oil revenue sector, necessitating a stronger performance by the state for growth outside of hydrocarbons.
- The tourism sector contributes very limitedly to economic growth in Algeria due to the absence of a real and developed tourism industry.

1.4 Study Objectives:

The study aims to highlight the reality of the tourism sector in Algeria, determine the contribution of tourism to the gross domestic product (GDP), and assess the role it plays in improving economic growth rates.

1.5 Importance of the Study:

The study provides readers and researchers with a scientific analysis and diagnosis of the policies and strategies for the development of the tourism sector in Algeria, both its current status and future prospects. Additionally, it addresses the evolution of economic growth rates in Algeria over a period of time.

1.6 The Methodology Used:

To achieve the objectives of the study, we relied on a descriptive and analytical methodology, which is suitable for this topic. Additionally, we used an inductive approach, relying on the "Eviews" software program to measure the impact of the tourism sector on economic growth in Algeria.

2. The theoretical framework of tourism and tourist services:

Tourism has become one of the most important sectors in international trade today, as it is a productive sector that holds significant importance in increasing national income, improving the balance of payments, serving as a source of hard currency, providing employment opportunities for the workforce, and serving as a goal for achieving economic development programs. Tourism has emerged alongside humanity and has expanded for several different human reasons and motivations. Therefore, there is a need to define its concept and its key economic indicators.

2.1 Tourism concept:

(**Zu Sehartlenhofen**) focused on the economic aspect in his definition of tourism, defining it as : "all interrelated processes related to the entry, temporary stay, and dispersion of foreigners within the boundaries of a specific region or country" (**Tawfiq, 1997, page 23**).

(**Pearce**) summarized tourism as: "all the relationships and phenomena resulting from trips and temporary stays of traveling people for recreational purposes and leisure time" (**Page, 2003, p. 7**). As for (**Robert**) he indicated that the duration of tourists' stay could be more than one day (overnight visitors) or less than that (same-day visitors) (**Macintosh & and Others, 1995, p. 11).**

2.2 Concept of Tourism Service and Its Characteristics:

Tourism services have several definitions that researchers have addressed from several aspects, and they have characteristics that distinguish them from other services.

2.2.1 Concept of Tourism Service:

The German (**E. Gurer Feruller)** defined tourism service as "a phenomenon of the times, arising from the increasing need for comfort, relaxation, change of scenery, and the sensation of the beauty of nature provided, and the feeling of joy and pleasure in staying in areas with unique natural characteristics, which is the result of the development of transportation means" **(Ben Aliyah, 2017, page 139).**

(Mathiot) defined it as "an organizational process where tourism is considered to be all the principles or rules that regulate promotional or beneficial trips related to travelers or tourists personally, and everything related to those who receive them and facilitate their transfer" **(Jamil, 2010, page 51).**

A comprehensive definition of tourism is: "travel for the purpose of entertainment, relaxation, or discovery. Tourism includes a range of activities and services that provide tourists with comfort and facilities when purchasing and consuming tourist products during their travel time or stay in tourist facilities. Thus, tourism encompasses all services related to travel, with the main element being the tourist."

2.2.2 Characteristics of Tourism:

Tourism is one of the most important sectors of human activity in modern states and it is characterized by several features regarding the nature of tourism itself, as follows (**Ameesh, 2015, page 29**):

- *According to its nature:* Tourism is characterized by the rare and sensitive tourist attractions specific to human activity. It is also characterized by the inability to monopolize or transport for the production of alternative tourist goods, with a lack of flexibility in the prices of tourist products despite differences in these products.
- *According to its impact:* Tourism is considered a service sector and a major source of national income because it is an integrated system. Competition in the tourism field is global among different countries, affecting both individual and national income.
- *According to its elements:* Tourism comprises several elements, including the dynamic element, the static or tourist element, and the natural purpose element.

From the above characteristics, we can conclude that tourism aims to capitalize on the available natural and human resources in any country (such as sandy beaches, moderate climate, snowy or mountainous areas, religious, historical, and archaeological sites), considering them as indicators attracting economic activity and increasing national income while also addressing unemployment by providing various job opportunities.

2.3 Indicators for Measuring Tourism:

There are various indicators for measuring tourism, but we attempted to summarize them into the following elements:

- *Total Number of Tourists:* Used to estimate the size of the tourism activity.
- *Number of Tourist Nights:* Linked to the average stay of tourists in the host country and varies depending on security conditions.
- *Nationalities of Tourists:* Represents the degree of tourism growth and development, and they represent a reciprocal relationship.
- *Tourist Flow:* The proportion of incoming tourists each year.
- *Provision of Tourism Facilities:* Such as hotels and providing basic services for tourists. Additionally, financial revenues generated by tourism in both foreign and domestic currency serve as significant indicators of tourism development in the country and job creation. **(Ben Hamida & Lashhab, 2021, page 115)**

2.2 The Theoretical Framework of Economic Growth:

Economic growth is considered one of the primary objectives pursued by governments and desired by societies because it represents the material culmination of economic and non-economic efforts within society. It is regarded as a necessary condition for improving the living standards of communities and serves as an indicator of their prosperity. Economic growth is closely linked to a set of essential factors within society, which act as conducive conditions for its development.

2.2.1 Definition of Economic Growth:

Economic growth is defined as the growth of output, national income, and per capita income primarily, without necessarily requiring significant and tangible changes in other related aspects, whether social, cultural, political, or other economic aspects. **(Khalef, 2007, p. 65)**

Additionally, the concept of growth implies an increase in Gross Domestic Product (GDP) or Gross National Income (GNI), leading to a continuous rise in the average real income per person. **(Abdelkader Mohamed Abdelkader, 2003, p. 11)**

From this simple definition of growth, it can be inferred that an increase in GDP should result in an increase in the individual's share, meaning that the growth rate of national income should exceed the population growth rate.

2.2.2 Determinants of Economic Growth:

Economists agree that the determinants of growth in aggregate output mainly revolve around the following factors: (Student, 2004, p. 183)

- *Labor Force Growth:* Growth in the labor force occurs either due to population growth or due to an increase in the labor force participation rate.
- *Investment:* Investment encompasses both physical and human capital. Physical investment involves additions to physical capital such as factories, machinery, transportation, and communication. Human investment includes investment in education, training, and health.
- *Technological Change:* This refers to technological advancements resulting from inventions and innovations, leading to the development of new products and more efficient production methods than traditional ones.

2.2.3 Elements of Economic Growth:

According to **(Atiya Nasif, 2008, p. 334)**, there are three main elements:

- *First Element:* Achieving an increase in the average per capita income. The average per capita income is measured by the ratio: National Income / Population. Achieving an increase in the average per capita income requires that the rate of increase in national income be greater than the rate of increase in population. This necessitates:

> **(The rate of increase in income / the rate of increase in population) > 1**

- *Second Element:* Achieving a real increase in the average per capita real income, meaning a real increase in individuals' ability to purchase various goods and services. Real income is measured by: Cash Income / General Price Level.

Therefore, achieving an increase in the average per capita income greater than the rate of increase in the general level of prices "inflation" means that a real increase in the average per capita income requires that:

> **(The rate of increase in the average per capita income / the rate of increase in the general level of prices) > 1**

- *The third element:* Achieving continuous and stable increase in the average per capita real income. Continuous increase in the average per capita real income requires that this increase be the result of a real increase in economic activity levels, meaning it does not occur due to temporary conditions such as receiving external aid for a certain period or sudden increases in prices of exported goods due to temporary conditions that disappear, as was the case with the oil price hike in 1973. This led to a significant increase in the

124

average per capita real income in oil-exporting countries, only to disappear with the subsequent oil price decline in the 1980s. This type of growth is considered transient. On the other hand, this increase must be stable, meaning it should not be subject to significant fluctuations in its rate from one period to another.

3. Development of tourism and economic growth in Algeria during the period 2005-2021:

The tourism sector is considered one of the sectors whose growth and development are linked to the economic advancement in various countries, as well as the development of industries and other phenomena, especially the transportation industry in all its branches, whether air or maritime. The following is an analysis of the development of tourism and economic growth in Algeria over a period of time, specifically during the years 2005-2021:

3.1 Economic growth development in Algeria during 2005-2021: Economic growth is defined as a process in which real income accumulates and increases continuously over an extended period of time, whereby this increase is greater than the population growth rate, while providing productive and social services.

*3.1.1 The development of Economic growth rate in Algeria during (2005-2021):*

The following presents an overview of the evolution of economic growth rate in Algeria during the period (2005-2021).

Table (1) : Economic growth rate in Algeria during 2005-2021 (%)

year	2005	2006	2007	2008	2009	2010	2011	2012	
MCE	5,9	1,7	3,4	2,4	1,6	3,6	2,9	3,4	
year	2013	2014	2015	2016	2017	2018	2019	2020	2021
MCE	2,8	3,8	3,7	3,2	1,3	1,2	1	-5,1	3,5

Source : :https://data.albankaldawli.org/indicator/ST.INT.RCPT.CD?locations=DZ, 2023

The following figure illustrates this further:

Figure 1: Evolution of Economic Growth Rate in Algeria during 2005-2021
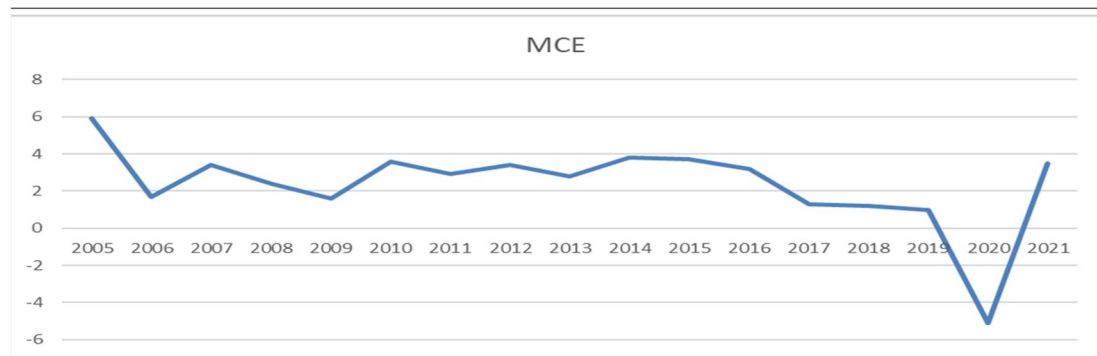
Source: Compiled by the researchers based on the preceding table.

Through the graphical curve, general trends in growth during the past two decades from 2005 to 2021 can be identified, with four major periods observed in the national economy:

- *From 2005 to 2006, and from 2019 to 2020*, there was a decrease in the economic growth rate from 5.1% to 1.7%, reaching 4.2% due to an economic recession resulting from the collapse of oil prices.
- *From 2006 to 2016*, there was fluctuation in the economic growth rate, reaching its lowest level in 2009 at 1.6% due to reduced demand and oil prices under the influence of the global financial crisis of 2008. In 2010, with the resumption of economic activity and an increase in oil prices in the global market, the growth rate reached 3.6%.
- *From 2016 to 2020*, economic growth in Algeria began to decline, ranging from 1.7% to a minimum of -5.1%, due to the severe crisis of collapsing oil prices that persisted since 2014, severely affecting the Algerian economy through a decline in oil revenues.
- *From 2020 to 2021*, growth resumed to reach 3.5% in 2021, attributed to the economic recovery following an increase in oil prices, rising from $42.12 per barrel in 2020 to $70.89 per barrel in 2021, representing an increase of $28.77 per barrel, or 68.30%. This was due to the economic crisis experienced by most countries worldwide due to the COVID-19 pandemic.

In conclusion, the development of the growth rate in Algeria highlights a clear reality: the almost total dependence of the state on oil revenues, making the national economy vulnerable to external shocks such as fluctuations in oil prices. Ultimately, the downturn in the hydrocarbon sector weighs heavily on the national economic activity, necessitating a stronger performance for non-hydrocarbon growth.

3.1.2 The reality of economic growth in Algeria during the period 2000-2021:

During the period from 2001 to 2019, Algeria implemented five key development programs. These include the Economic Revival Program during the period 2001-2004, the Complementary Program to Support Growth during the period 2005-2009, the Five-Year

Development Program during the period 2010-2014, the Economic Growth Consolidation Program during the period 2015-2019, and finally, the New Growth Model during the period 2016-2030. Algeria allocated substantial financial resources to these development programs, aiming to uplift the national economy, improve individuals' livelihoods, mitigate poverty and unemployment, and support economic development.

▪ *During the period 2000-2014:*

With the onset of the third millennium, Algeria embarked on implementing new reforms in an attempt to provide a new momentum for transitioning towards better economic growth and ensuring a strong, effective, and sustainable start to economic and social development. The public authorities chose revitalization as a strategy following the Keynesian model, aiming to increase economic growth through government investment spending. In this context, several development programs were adopted, including the Economic Revival Support Program (2001-2004), the Complementary Program to Support Growth (2005-2009), and the Growth Consolidation Program (2010-2014). **(Lamiri, 2013, pp. 77-78)**

▪ *During the period from 2015 to 2021:*

During this period, the 2014 oil crisis emerged as a real test for the economies of the world. For Algeria, it highlighted negative aspects, primarily the excessive reliance of the national economy on the hydrocarbon sector. In this regard, the Algerian government in 2016 reviewed the key features of the new economic model it seeks to implement between 2016 and 2019 to confront the repercussions of the collapse in oil prices, while acknowledging the economic challenges and the uncertainty of the future. The essence of the new model lies in liberating the country's economy from dependence on hydrocarbons through tax reform, making the budget serve growth, establishing a strong industrial and productive base by improving the business environment, enhancing local production, and combating corruption and bureaucracy. Hydrocarbons represent about 95% of Algeria's total exports, and their revenues account for about 60% of the country's budget**. (Ministry of Finance, 2016, page 20)**

3.2 The reality of the tourism sector in Algeria during the period from 2005 to 2021:

Algeria possesses significant tourism resources including historical, cultural, and geographical elements. However, the actual state of tourism does not reflect the abundance of these assets. Therefore, we will delve into the reality of tourism in Algeria over the span of several years from 2005 to 2021, based on available statistics from the official website of the Ministry of Tourism.

3.2.1 Evolution of Tourism Services in Algeria during (2005-2021):

Tourism services (ST) declared in World Bank data are represented by the percentage of service imports from the balance of payments, and the following table shows this:
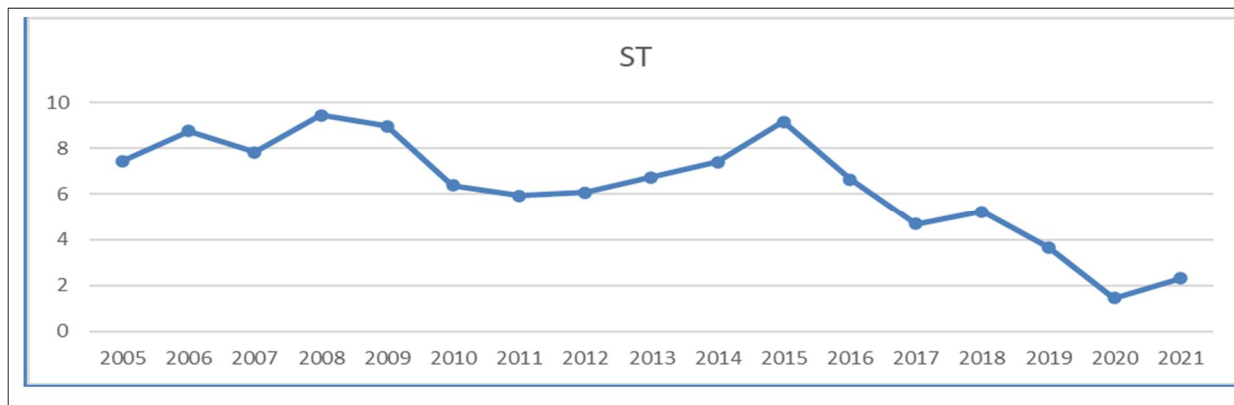
Table (2): Evolution of Tourism Services in Algeria during (2001-2021) (%)

Year	2005	2006	2007	2008	2009
ST	7,46147607	8,75796178	7,84357363	9,45109996	8,96920
Year	2010	2011	2012	2013	2014
ST	6,39282	5,9365	6,0829	6,7437155	7,41471167
Year	2015	2016	2017	2018	2019
ST	9,1690345	6,64263443	4,66875	5,22531	3,6652

Source : https://data.albankaldawli.org/indicator/ST.INT.RCPT.CD?locations=DZ

The following figure illustrates this further.

Figure number (2): Development of tourism services in Algeria during (2001-2021)

Source: Prepared by the researchers based on the previous table

The graph represents the changes in tourism services in Algeria during 2005-2021, where we observe that:

- From (2005-2008) and (2012-2015), there is an increase in the value of tourism services, reaching its maximum value for this period at 9.1690345%.
- From (2008-2012) and (2015-2021), there is a decrease in the value of tourism services, reaching its minimum value at -1.4577%.

3.2.2 The reality of the tourism services sector in Algeria during (2005-2021):

A. The position of the tourism sector within the public policy and development programs in Algeria:

- The content of the development programs adopted by Algeria during the period (2001-2014) indicates marginalization and lack of attention to the tourism sector within the state's policy, except for some aspects and measures such as the law related to investment development on August 20, 2001, and the law related to sustainable development on February 17, 2003, and others**... (Mastoui, 2018-2019, page 64).**
- Afterwards, Algeria launched several programs to develop the tourism sector in the country, the latest being the Strategic Plan for Tourism Development in Algeria for the 2030 prospects. However, the total number of tourism projects has experienced a slow pace, which can be attributed to the lack of directed funding for the tourism sector and the absence of a specialized entity for financing the tourism sector. Additionally, there has been a delay in classifying expansion areas and tourist sites (ZEST) and studying tourism development plans (PAT) specific to each expansion area and tourist site. **(Ghazzazi & Edir, 2020, page 186)"**

B- The status of tourism investments in Algeria (2017-2021):

- During the years 2017-2018, it was noted that the number of foreign and non-resident tourists entering Algeria was 2,039,444 tourists in 2016 compared to 2,450,785 tourists in 2017, reflecting a 20.17% growth between the previous years. In 2018, 2,657,113 tourists entered the country.
- As for the period from 2019 to 2021, the tourism sector was affected on February 22, 2019, leading to a decrease in the balance of payments in the tourism sector, a decline in the gross domestic product, as well as a reduction in employment. According to statements from the National Statistics Office, the gross domestic product reached 0.3% (excluding hydrocarbons 2.8%) (Nour El-Din Nasseri, 2022, p. 126) due to the outbreak of the coronavirus pandemic.

3.2.3 The reality of international tourism development in Algeria. Number of arrivals (NT):

tourists arriving (overnight visitors) are the number of tourists traveling to a country other than their usual country of residence, but outside their usual environment, for a period not exceeding 12 months. The data on inbound tourists refers to the number of arrivals, not the number of departures. The following table illustrates this:

Table (3): Number of tourist arrivals to Algeria during (2005-2021).

year	2005	2006	2007	2008	2009	2010
NT	1443000	1638000	1743000	1772000	1912000	2070000
year	2011	2012	2013	2014	2015	2016
NT	2395000	2634000	2733000	2301000	1710000	2039000
year	2017	2018	2019	2020	2021	
NT	2451000	2657000	2371000	591000	66 9950	

Source : https://data.albankaldawli.org/indicator/ST.INT.RCPT.CD?locations=DZ

The following figure provides further clarification of this development:

Figure (3): Evolution of the number of tourist arrivals to Algeria during
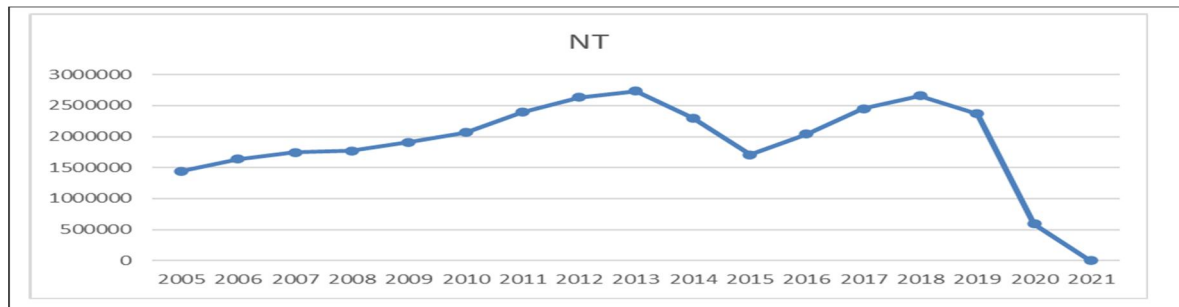
Source: Compiled by the researchers based on the previous table.

3.2.4 The reality of the development of international tourism revenues (RT)

International tourism revenues consist of expenditures made by international visitors, including payments to national carriers for international transport. These revenues should include any amounts paid in advance for goods or services obtained in the destination country. The following table illustrates this:
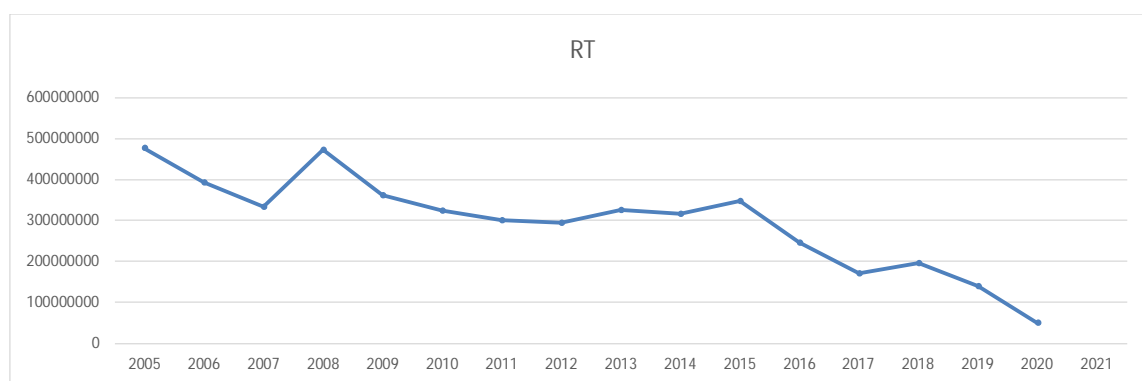
Table (4): Evolution of tourism revenues in Algeria during (2005-2020)

year	2005	2006	2007	2008	2009
RT	477000000	393000000	334000000	473000000	361000000
2010	2011	2012	2013	2014	2015
324000000	300000000	295000000	326000000	316000000	347000000
Year	2016	2017	2018	2019	2020
RT	246000000	171000000	196500000	140000000	50000000

Source : https://data.albankaldawli.org/indicator/ST.INT.RCPT.CD?locations=DZ

The following figure provides further clarification of this development:

Figure (4): Evolution of tourism revenues in Algeria during (2001-2020).

Source: Prepared by the researchers based on the previous table

The curve illustrates the evolution of tourism revenues in Algeria during the period 2005-2021. We observe a decline in tourism revenues and a lack of development, indicating a decrease in the value of amounts paid by international visitors.

3.3 The relationship between the tourism services sector and economic growth in Algeria:

The contribution of tourism to the gross domestic product (GDP) varies from one country to another depending on the development of the tourism sector. The following analysis can diagnose the contribution of tourism to Algeria's GDP during the period from 2005 to 2021. it reflects the extent of tourism revenue resulting from tourist spending on various tourism-related goods and services (transportation, accommodation, dining, etc.). For Algeria, the contribution of the tourism sector to the GDP is very weak, as evident from the following:

Table (5): Contribution percentage of the tourism sector to the gross domestic product for the period (2005-2020).

2015	2014	2013	2011	2010	2009	2008	2007	2006	2005	year
2.3	2.5	2.05	1.7	2.5	2.3	2.05	1.7	1.2	1.7	contribution
Gross Domestic Product excluding the hydrocarbons sector					2020	2019	2018	2017	2016	year
					1,1	1,8	1,7	1,6	1,4	contribution

Source: Source: National Office of Statistics, May 2023

The previous table indicates that the contribution of tourism to the gross domestic product is very low, not exceeding 2.5% at most during the studied period. This percentage

is very modest considering Algeria's tourism potential, which qualifies the sector to serve as an alternative income source for the Algerian economy apart from hydrocarbons. This contribution reached its lowest level in 2006 at 1.2%, not solely due to a decline in tourism sector revenues, but also due to a decrease in the gross domestic product for the same year despite the rise in oil prices from $60 per barrel in 2005 to $66.05 per barrel. This decline can be attributed to a decrease in the pace of implementation of tourism development projects. In 2020, the contribution reached 1.1%, reflecting the impact of the COVID-19 pandemic on the number of arrivals to Algeria. The following figure illustrates the evolution of the tourism sector's contribution to the gross domestic product.

Figure (5): Evolution of the tourism sector's share in the gross domestic product for the period (2005-2020).
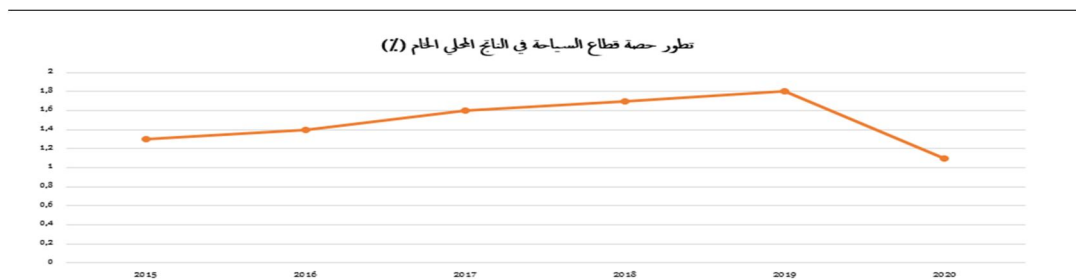
Source: Compiled by the researchers based on the previous table.

Based on the aforementioned, we can interpret the weakness of the tourism sector's contribution and its limited impact on the gross domestic product primarily as a result of the sector's economic underdevelopment since independence. The state's lack of focus on tourism, relying instead on the hydrocarbons sector as the most important driver for achieving economic development at a faster pace, is a significant factor. The state did not prioritize this sector until later stages, which had a negative impact on the sector's outcomes.

4. *Estimation of the simple regression model between the tourism sector and economic growth.*

To study the estimated standard model pertaining to (tourism revenues and tourist arrivals) and economic growth in Algeria, we conducted a series of tests to determine the validity of the model through economic theory and its statistical adequacy. Subsequently, the best model is selected for testing from a standard perspective.

5.1 The standard study

The study data was obtained from the World Bank database (Gross Domestic Product growth, number of international tourist arrivals, tourism revenues) to measure the impact of the tourism sector on economic growth in Algeria during the period from 2005 to 2021, where

we have two independent variables representing the tourism sector and one dependent variable.

- **MCE:** The dependent variable, which in our study represents economic growth in terms of Gross Domestic Product growth (% annually).
- **NT:** The first independent variable, which in our study represents the number of international tourist arrivals.
- **RT:** The second independent variable, which in our study represents tourism revenues.

After collecting the data pertaining to the study variables, the mathematical form of the standard model and the functional form representing this model are determined. This constitutes the first step in constructing a standard model using multiple linear regression.

5.1 *Estimation of the multiple regression model for the impact of the tourism services sector on economic growth.*

To measure the impact of the services sector on economic growth in Algeria, we utilized the Ordinary Least Squares (OLS) technique using the EViews software. The study period was determined to be from 2005 to 2021 due to the unavailability of tourism sector data before 2005. Statistical data was obtained from the World Bank database. The following table illustrates:

Table (6): Estimation of the multiple regression model for the impact of the tourism sector on economic growth

Dependent Variable: MCE
Method: Least Squares
Date: 06/22/23   Time: 15:42
Sample: 2005 2020
Included observations: 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NT	1.83E-06	6.07E-07	3.009317	0.0101
RT	1.52E-08	2.93E-09	5.193559	0.0002
C	-5.922515	1.550037	-3.820886	0.0021
R-squared	0.732907	Mean dependent var		2.300000
Adjusted R-squared	0.691815	S.D. dependent var		2.341225
S.E. of regression	1.299716	Akaike info criterion		3.529530
Sum squared resid	21.96041	Schwarz criterion		3.674390
Log likelihood	-25.23624	Hannan-Quinn criter.		3.536948
F-statistic	17.83607	Durbin-Watson stat		2.069621
Prob(F-statistic)	0.000188			

Source: Prepared by the researchers based on the outputs of EViews 10.

Estimation Command:

========================

LS MCE NT RT C

Estimation Equation:

========================

MCE = C(1)*NT + C(2)*RT + C(3)

Substituted Coefficients:

========================

MCE = 1.8260976562e-06*NT + 1.52195204392e-08*RT - 5.92251514041

X1 (NT): Gross Domestic Product (GDP)

X2 (RT): Tourism Revenues

Y (MCE): Number of Tourist Arrivals

5.2 Model Parameters Test:

-β_0 Parameter Test: From the previous table, we observe that the β_0 parameter has a statistically significant value indicated by the calculated t-statistic (t=4.371027) with a significance level (prob=0.0008) lower than the adopted significance level in the study (α=0.05). Therefore, we reject the null hypothesis stating that the estimated β_0 value is not significant and accept the alternative hypothesis that it is significant.

-β_1 Significance Test: From the previous table, we observe that the β_1 parameter has a statistically significant value indicated by the calculated t-statistic (t=-3.503709) with a significance level (prob=0.0039) lower than the adopted significance level in the study (α=0.05). Therefore, we reject the null hypothesis stating that the estimated $\beta1$ value is not significant and accept the alternative hypothesis that it is significant.

Based on the significance of the estimated model parameters, we conclude that the statistical model of the study is significant.

5.3. Overall Significance Test for the Estimated Model:

We use both the Fisher's F-test and the coefficient of determination (R^2) in this test.

-Fisher's F-test: This test aims to assess the overall significance of the model by examining the following hypotheses:

H_0: Indicates no relationship between the independent and dependent variables.

H_1: Indicates at least some relationship between the dependent and independent variables.

From Table (6), we find that the calculated Fisher's F-statistic equals (F=12.27598), with a significance level (prob=0.003886), which is lower than the adopted significance level in the study (α=5%). Therefore, we reject the null hypothesis and accept the alternative hypothesis, suggesting that there is a linear relationship between the tourism sector and

134

economic growth in Algeria. Consequently, we can conclude that the model has good statistical significance.

-*Test of the correlation quality using the coefficient of determination R²:* The obtained value for the coefficient of determination is (R^2=0.732907). This means that 73.29% of the variations in economic growth are explained by variations in the tourism sector, indicating a strong correlation between the variables. The remaining percentage is explained by other factors not included in the model.

After confirming the existence of a linear relationship between the tourism sector and economic growth in Algeria, it is essential to ensure its freedom from measurement and statistical issues by conducting several tests to assess the model's quality (e.g., heteroscedasticity test, autocorrelation test, residual normality test).

5.4 Model Quality Tests:

- *Variance Problem Test*

Table (7): Variance Problem Test for the Estimated Multiple Regression Model

Heteroskedasticity Test: ARCH

F-statistic	0.685330	Prob. F (1,13)	0.4227
Orbs*R-squared	0.751166	Prob. Chi-Square (1)	0.3861

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/22/23   Time: 15:44
Sample (adjusted): 2006 2020
Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.939717	0.462165	2.033295	0.0630
RESID^2(-1)	0.198256	0.239484	0.827847	0.4227
R-squared	0.050078	Mean dependent var		1.216281
Adjusted R-squared	-0.022993	S.D. dependent var		1.222890
S.E. of regression	1.236869	Akaike info criterion		3.386610
Sum squared reside	19.88799	Schwarz criterion		3.481016
Log likelihood	-23.39957	Hannan-Quinn criter.		3.385604
F-statistic	0.685330	Durbin-Watson stat		1.994910
Prob(F-statistic)	0.422695			

Source: Compiled by the researchers based on the outputs of EViews 10.

-Test of Heteroscedasticity Problem

Table (8): Heteroscedasticity Problem Test for the Estimated Multiple Regression Model

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.138762	Prob. F(2,11)	0.8719
Obs*R-squared	0.393739	Prob. Chi-Square(2)	0.8213

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 06/22/23   Time: 15:48
Sample: 2005 2020
Included observations: 16
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NT	-5.97E-08	6.76E-07	-0.088314	0.9312
RT	3.18E-11	3.24E-09	0.009815	0.9923
C	0.118868	1.679909	0.070759	0.9449
RESID(-1)	-0.145296	0.309932	-0.468799	0.6484
RESID(-2)	0.058444	0.327788	0.178299	0.8617

|			
R-squared	0.024609	Mean dependent var	7.77E-16
Adjusted R-squared	-0.330079	S.D. dependent var	1.209970
S.E. of regression	1.395447	Akaike info criterion	3.754613
Sum squared resid	21.41999	Schwarz criterion	3.996047
Log likelihood	-25.03691	Hannan-Quinn criter.	3.766977
F-statistic	0.069381	Durbin-Watson stat	1.763320
Prob(F-statistic)	0.989949		

Source: Compiled by the researchers based on the outputs of EViews 10.

The results of Table (8), the Breusch-Pagan-Godfrey Heteroskedasticity Test, indicate that the probability value of the Fisher F-statistic is greater than the 5% significance level, confirming the absence of heteroscedasticity in the estimated model.

-Test of Normality Distribution of Residuals

Figure (9): Results of the Test of Normality Distribution of Residuals
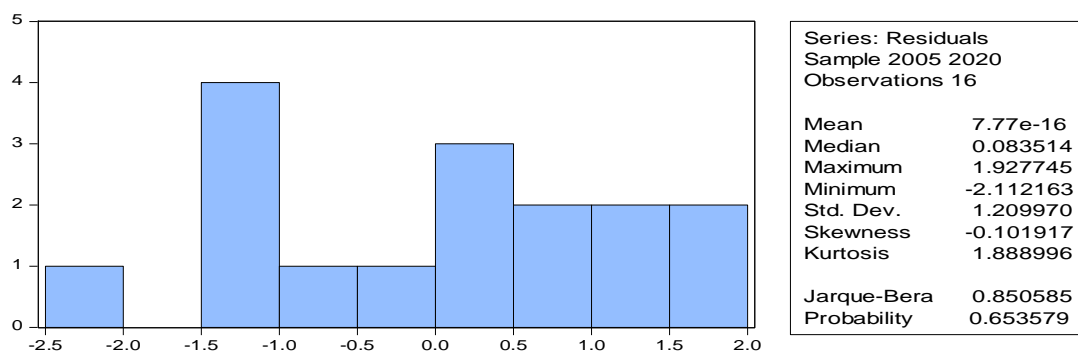
Source: Based on the outputs of EViews 10.

The results of Figure (9), the Jarque-Bera test of residual distribution, indicate that the statistical probabilities are greater than the 5% significance level. Therefore, the residuals follow a normal distribution.

After ensuring the absence of measurement and statistical errors in the estimated model, we can proceed with the economic study by examining the signals of the previous variables while considering their compatibility with economic theory.

6. *Economic Study and Discussion of Results:*

Based on the results obtained using EViews 10, we observe that the coefficient of the tourism sector has a positive sign, indicating a significant relationship between the dependent variable (economic growth) and the independent variable (tourism sector). Specifically, each unit increase in the rate of international tourist arrivals corresponds to an increase in economic growth rate by 1.826 units, and each unit increase in tourism revenues in Algeria corresponds to an increase in economic growth rate by 1.521 units. This is in line with economic theory and previous studies.

This alignment can be attributed to several considerations adopted in the Algerian economy, including:

- The Algerian tourism sector benefits from a long-term strategy embodied in the Tourism Development Plan for the 2030 vision, which includes five stages aimed at revitalizing Algerian tourism and enhancing its attractiveness as a tourist destination in international markets. This plan involves various initiatives such as establishing tourist and environmental resorts in Annaba, Constantine, Algiers, and Oran, creating health and wellness centers like Hammam Gargar, Hammam Melouane, and El-Shariah, and launching 80 tourism projects in 6 tourist poles for excellence, comprising 5986 beds and 800 job positions.
- Reviving and organizing tourism marketing, including official awareness programs, and leveraging modern communication and media tools such as the internet to enhance Algeria's image abroad and promote it as a tourist destination.
- Developing small and craft industries with a heritage character, particularly those linked to supporting the tourism industry, identifying suitable and designated sites for tourism investment, and encouraging foreign direct investment in this sector in particular.

Despite the developmental projects undertaken in the Algerian tourism sector, several problems hinder the progress of tourism investment in Algeria, including:

- Difficulty in financing tourism projects due to their high costs, the absence of a specialized entity in tourism financing, and the marginalization of the tourism sector

by the authorities in the country, where it often receives very low financial allocations compared to other economic sectors. Additionally, the issue of tourist real estate poses a major obstacle for investors.

- Algerian tourism has been negatively affected by the lack of security, chaos, and terrorism, which hindered both investors and foreign tourists, despite the Quality Algeria Plan adopted to improve the image of Algerian tourism and present a clear and comprehensive image that enhances Algeria's attractiveness in international markets and restores the competitiveness of tourism in Algeria.

- Weak growth in the development of tourism projects has negatively impacted the tourism reception capacity in Algeria. The material objectives outlined within the action plan of the Tourism Development Plan during its initial phase from 2008 to 2015 experienced a tangible delay in the number of planned tourist arrivals, resulting in a negative impact on tourism revenues in hard currency and its contribution to Algeria's gross domestic product (GDP).

7. Conclusion

Through this study, we aimed to shed light on the tourism sector and its impact on economic growth in Algeria during the period 2005-2021. In line with the nature of the topic, we conducted a descriptive analysis of key indicators of the tourism sector and economic growth. Subsequently, we built an economic standard model to demonstrate the impact. The study yielded several findings, summarized as follows:

- Tourism flows in Algeria are characterized by weakness compared to domestic and international tourism, as Algerian citizens tend to travel abroad more than foreign tourists entering the country. This indicates the sector's low profitability and its weak contribution to the gross domestic product (GDP).

- The study also found a modest impact of the tourism sector on economic growth in Algeria during the study period, indicating the weak developmental performance of tourism in Algeria and the failure of the adopted tourism development strategy. This is attributed to the lack of prioritization of the national economy for tourism due to its reliance on hydrocarbons as a primary source of hard currency without dependence on other sectors.

- The issue of tourist real estate, particularly financing problems, impedes the completion of tourism projects in Algeria despite the achievements of partnership and financing outlined in the strategic plan. While agreements with banks have been reached, the high cost and long return period of tourism investments do not align with the loans provided by banks, exacerbated by the absence of a specialized entity in tourism project financing.

- Ultimately, the limited impact of the tourism sector on economic growth in Algeria indicates the absence of a real and developed tourism industry capable of investing in and understanding tourism demand, providing satisfactory tourism services.

Consequently, a portion of this demand shifts to neighboring Arab countries or European countries with advanced tourism services.

8. Recommendations:

- Encourage domestic and foreign investments directed towards the tourism sector, establishing partnerships with leading tourism countries to gain expertise and utilize it in achieving tourism development.
- Ensure the completion of strategic plans for tourism development at the state level, with a focus on completing tourism poles and villages as the cornerstone to make Algeria a distinguished tourism hub. This should be accompanied by strict supervision to monitor plan implementation.
- Address the issue of financing tourism projects, eliminating obstacles hindering the completion of tourist real estate and administrative and bureaucratic procedures.
- Ensure the security and safety of both domestic and foreign tourists in all tourism facilities.
- Offer competitive prices along with high-quality services to enhance competitiveness.

9. *Bibliography List* :

1. Books:

- Iman Atiya Nassef. (2008). Principles of International Economics. Alexandria, Dar Al-Jamea Al-Jadeeda, Egypt.
- Atiya Abdelkader Mohamed Abdelkader. (2003). Modern Trends in Development. University House for Printing and Publishing, Alexandria, Egypt.
- Faleh Hassan Khalef. (2007). Knowledge Management (1st edition). Modern Book World, Amman, Jordan.
- Maher Abdelaziz Tawfik. (1997). Tourism Industry. Zahdan Publishing and Distribution House, Jordan.
- Mohamed El-Serafy. (2010). Stimulating Tourism Sales. Sahab Publishing and Distribution House, Egypt.
- Mohammed Awad Taleb. (2004). Introduction to Macroeconomics. Amman, Jordan: Institute of Banking Studies.

2. Theses:

- Samira Amish. (2015). The Role of Promotion Strategy in Adapting and Improving Algerian Tourism Demand, Doctoral Thesis, Setif, Faculty of Economic Sciences, Commercial Sciences, and Management Sciences, University of Ferhat Abbas, Setif, Algeria.

- Nesma Jameel. (2010). Cultural Tourism and Heritage Valorization through Television Programs. Master's Thesis, Department of Media and Communication, Faculty of Humanities and Social Sciences, University of Oran, Algeria.

3. Journals *article* :

- Lakhdar Ben Alia. (March 20, 2017). Activating Sustainable Development through Tourism Investment. Economic Notebooks Journal, Volume 8 (Issue 1), pp. 137-155.
- Mariam Ben Hamida and Ahmed Lashhab. (June 30, 2021). The Tourism Environment and Its Impact on the Development of the Algerian Tourism Sector. Journal of Humanities Sciences, Volume 8 (Issue 2), pp. 110-129.
- Macintosh, R., & and Others. (1995). Tourism Principles, Practices and Philosophies (Vol 7). Printed in USA by John Wiley & Sons Inc.
- Page, S. J. (2003). Tourism Management Managing for Change (Vol. 1). London: Printed in Italy.

4. ***Internet websites*:**
   https://data.albankaldawli.org/indicator/ST.INT.RCPT.CD?locations=DZ, 2023