

The Reality Of Tourism Investments In Algeria Causality Study For The Period (2000–2020)

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Abstract :	Résumé:
<p>Support economic activity in general. This study was to address the control factors of income tourism. We purpose the viewing and analyse the reality of tourism in Algeria. We reviewed through which concepts related to tourism investment and the contribution of the tourism sector to the national economy. The study came in the standard constructed with the fundamental objective to search for tourist income determinants in Algeria for the period (2000–2020). We have used the self-regression vector model (VAR) with five variables, the number of tourists, government spending, tourism, the exchange rate of real dinar against the dollar and the rate of inflation. We have used several tests to search for causality between the variables and trends.</p> <p>Keywords: Investment programs tourism income; tourism income determinants ; vector self-regression (VAR)</p> <p>JEL Classification Codes : L83; C32; E2</p>	<p>Soutenir l'activité économique en général. Cette étude devait aborder les facteurs de contrôle du tourisme de revenu. Nous nous proposons de visualiser et d'analyser la réalité du tourisme en Algérie. Nous avons passé en revue à travers quels concepts liés à l'investissement touristique et à la contribution du secteur touristique dans l'économie nationale. L'étude est entrée dans la norme construite avec l'objectif fondamental est de rechercher les déterminants des revenus touristiques en Algérie pour la période (2000-2020). Nous avons utilisé un modèle vectoriel d'auto-régression (VAR) à cinq variables, le nombre de touristes, les dépenses publiques, le tourisme, le taux de change du dinar réel par rapport au dollar et le taux d'inflation. Nous avons utilisé plusieurs tests pour rechercher la causalité entre les variables et les tendances.</p> <p>Mots clés: Programmes d'investissement ; revenus du tourisme ; déterminants du revenu touristique ; autorégression vectorielle (VAR)</p> <p>Codes JEL : L83; C32; E2</p>

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I- Introduction :

Tourism has today enjoyed a critical and essential role in the economic development of many countries that possess vital tourism ingredients. The dense tourism activities resulted in economic, social, cultural, environmental and urban consequences and effects on the social lives and peoples because of their impact on national economies. During its contribution to shaping the GDP and improving the balance of payments position as a result of the tourism revenues achieved in the tourism balance. In addition to its contribution to achieving direct and indirect jobs due to its front and backlinks with many economic sectors such as transportation, restaurants and other services (Briedenhann & Wickens 2004).

The interest of many countries in the tourism sector has grown and the need to develop. It has become a vital sector that occupies an ample space in the various development programs and plans for these countries to diversify their revenues and economic incomes. Tourism has become the first industry in the world, even in major industrial countries such as Britain, America and Japan more than that. There are countries whose economy is based on the tourism sector. So, the social development process in it is centred on the benefits that this sector brings to it (Sharpley 2002)

I.1. The problematic

Tourism as essential pillars of economic development National and foreign tourism investment represent a vital and active nerve in achieving the balanced and sustainable development process of any country, as any increase in the volume of investment will affect the incomes of countries (Massidda & Mattana 2013).

The Algerian government has paid increasing attention to the tourism sector, its development and activation of its role in the national economy, especially in light of the current economic conditions. It is the adoption as one of the strategic options in the national income to form a substitute resource for hydrocarbons. In this context, since 2008, Algeria has prepared the 2030 Agenda for Tourism Development (SDAT 2030). It as a tourist investment program through which Algeria aspires to gain a position in the international tourism market and make it a tourist destination and thus bring additional revenues to the public treasury. Therefore, Algeria is betting on tourism investment within its development policies and strategies. These investments, whose size has not yet risen to the required level, as the sector's contribution did not exceed 6.7% of the GDP in 2016, according to the World Tourism Organisation (Gray 2000).

Based on the above, we can raise the following problem:

What are the factors affecting tourism income in Algeria?

I.2. The importance of studying:

To address the issue, we offer the following hypotheses:

- Tourist investment is the factor that causes tourism growth (cause), and the causal connection between tourism investment and tourism growth should be one-way (tourism growth driven by tourism investment).
- Confirms that increased tourist investment is accompanied by increased tourism growth, and that there must be a one-way causal link between tourism growth and tourism investment.

- The exchange hypothesis predicts the presence of a two-way causal relationship between tourism growth and tourism investment.

I.3. Objectives of the study:

The research derives its importance from the fact that it deals with tourism as an essential sector not severely exploited in Algeria. The significance of the study is the fact that the tourism sector alternative in many countries as it contributes to diversifying sources of income and revitalising the rest of the economic sectors, and since Algeria has all the qualifications to make it a destination for tourists if these potentials are best exploited.

I.4. The methodology used:

This study aims to present and analyse the reality of tourism In Algeria through Review its ranks in the Tourism and Travel Competitiveness Index issued by the World Economic Forum. Then we evaluate the impact of investment programs and knowing the determinants of tourism income in Algeria during the period from (1995 - 2017) and the most important causes and obstacles that slow down tourism development in Algeria. Despite its huge assets and its tourism potential.

I.5. The limits of the study:

This study relied on the descriptive and analytical approach, as it is building on describing the studied phenomenon, in the revealing sense the real relationships that describe the event under study. In the beginning, a literary survey was carried out regarding research variables (investment programs and determinants of tourism demand) and reviewed the most important concepts. Then we used the standard (quantitative) approach to find out the determinants of tourism income resulting the impact of investment programs using the usual statistical methods represented in the vector self-regression model (VAR) and Granger Causality Test (Sak & Karymshakov 2012).

I.6. The limits of the study:

The researchers encountered some problems that may be considered as determinants of the study, the most important of which are:

There is no separation in the data on tourism income between what has come from domestic tourism or foreign tourism.

No, the data in the Algerian Central Bank there is an indicator for the prices of tourism services, so the researchers resorted to replacing it by calculating the inflation rate through the general living-cost index.

II– Concepts of tourism investment:

II.1 Tourism: The concepts of tourism are varied in number

(Darbellay & Stock 2012) define Tourism as ‘the phenomenon that has a relationship that stems from the stranger’s residence in a place outside their permanent and usual residence, provided that it is not a paid job or otherwise.’

Tourism is defined as a phenomenon: ‘a temporary transitional process carried out by a large number of different residents countries. Leaving their permanent place of residence, travelling

to other places within the borders of their country (domestic or local tourism), or other countries (international external tourism)’.

II.2 Tourism investment programs:

Tourism is represented as an investment in the total of what is spent in the tourism sector and the foreign investments that the state attracts to this sector according to a studied plan and time perspective, as tourism investments include ‘various activities directly related to the tourism sector. The investment is related to building hotels and semi-hotel units. As well as it is contributing to improving basic structures Urbanisation, energy institutions, transport and communications infrastructure. The development of tourism investment also depends on the strength of the tourism product offered and the volume of demand for it internally and externally (Nesticò & Maselli 2020).

II.3 Tourism Planning Guideline (SDAT 2025)

It is considered a strategic dimension of reference for the tourism policy in Algeria, and it is considered part of the national plan to prepare the region (SNAT 2030). This scheme is based on five dynamics that constitute the highway to revitalise tourism in Algeria and support its return to the international scene, by valuing the destination of Algeria to multiply. Its attractiveness and create poles of tourist excellence and the application of the tourism quality scheme to ensure the excellence of the national tourism offer. In addition to high-quality professional training and Openness to information and communication technologies and positioning in a new tourism field that is in line with global trends and supporting and accompanying investors to revive the tourism sector. This scheme defined five goals (Abada & Foura 2019):

- Promotion of an alternative fuel economy;
- Valorising the image of Algeria and making it a tourist destination par excellence;
- Stimulating significant balances and their impact on major sectors;
- Valuation of historical and cultural heritage takes into account the specificity of all national soil;
- Permanent documentation between promoting tourism and the environment.

II.4 Tourism income

Tourism revenues contribute to bringing hard currency to many tourist countries, and tourism income can be defined in several ways as follows:

In a way, the output is defined as ‘the value the additive for tourism activity, which measures the value of tourism output at the prices of factors of production by all industries that Prepare Outputs Tourist.

Tourism income can also be defined by the method of spending as ‘it is what tourists spend in purchasing all kinds of goods and services in the host country. Which is the income of the economic (service) units operating in the tourism field.’

As for the income method, it can be defined as ‘the total income (rent, interest, wages, and profits) for individuals working in the tourism sector in exchange for presenting the factors of tourism production to tourism projects during one year’.

In general, tourism revenues can be defined as all the revenues the tourists earn from tourism and what tourism generates as an economic activity and a tax vessel. And what the individuals, companies, institutions, bureaus, hotels, airlines, and marine navigation achieve, they provide the tourist services they provide (Giaccio & al 2018).

II.5 The contribution of the tourism sector to the national economy:

Tourism is the most critical pillar in support of national economies. It is a source of funding for countries that benefit tourism potential, as it contributes to increasing the national income in foreign currencies necessary for the sustainable development process.

II.6 Tourism sector contribution to GDP:

In the next table we will give a clear picture of the contribution tourism sector to the GDP in Algeria:

Table 1: (Tourism sector contribution to Algeria's GDP)

the years	2000	2005	2010	2015	2016	2017	2018	2019	2020
Algeria	0.68	0.61	0.43	0.45	0.47	1.5	1.7	1.8	1.1

The source : The World Atlas database Kanoema

As illustrated in the previous table, the contribution of tourism to the gross domestic product is meagre and does not exceed the ratio of (1.5%) as a maximum during the period. As this contribution was at its lowest level in the year 2010, the rate does not exceed (0.43%) and this decline is due to the global financial crisis that affected the foreign tourists' flows, in particular as well as the decline in international capital. Then there was a gradual development to the year 2019, and then a decrease in the year 2020 due to COVID-19.

As such, the poor performance of the tourism sector and its limited contribution to GDP is mainly due to the lack of economic development in this sector since independence. Due to the nature of the economic model based on demand and the strategy of industrialized industries as the core of the process accelerating economic development. This is the opposite of many neighbouring countries such as Morocco and Tunisia that gave priority to the tourism sector within development plans and to improve their competitive advantage in this sector at the international level.

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II.7 The contribution of the tourism sector to the balance of payments:

Tourism is an essential source for attracting foreign direct investment and hence a source of foreign exchange flow through revenues generated from the tourism sector. Many economic studies have emphasised the importance of foreign direct investment and its tourism revenues that are included in unforeseen exports, and to assess the tourism contribution to bringing in hard currency For Algeria. The following table highlights tourism revenues as a percentage of total exports:

**Table 2: Algeria's tourism revenue as a share of full exports
% (2000–2019)**

the years	2000	2005	2010	2015	2016	2017	2018	2019
Algeria	0.47	0.98	0.53	0.95	0.74	0.69	0.65	0.50

The source: Word Bank 2000-2020.

We note from the data recorded in the previous table that tourism revenues for Algeria contribute only to a very small amount. In 2015 they constituted about 0.95% of total exports, and in 2019 the proportion of tourism revenues from exports decreased to 0.50%, which indicates that oil exports account for a large part of the total national exports.

II.8 Tourism's contribution to employment

The tourism sector is one of the most prominent sectors that provide and diversify various jobs positions in the world. Jobs are represented in tourism activities that require direct contact with tourists (such as workers in hotels, restaurants, and tourist agencies). While jobs in the tourism economy include: previous jobs. In addition to jobs In the complementary sectors of the tourism sector. The following table highlights the development of the volume of employment in the tourism and travel sector in Algeria during the period 2000–2020:

**Table 3: (Evolution of direct employment in the tourism sector for
Algeria: 2000–2020)**

the years	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Algeria	2.4	2.7	2.5	2.6	2.7	2.9	2.7	2.9	2.7	2.7	2.76	2.83	2.9

Source: world travel and tourism council report 2020 Algeria

Judging from the ratios shown in the table above, we find. The proportion of direct employment is in the tourism sector in Algeria relative to the total general remains insufficient and weak to provide direct employment opportunities, which is evident by (2.9%) in 2020, while we find that the sector contributes to employing more than (15%) in Morocco. This is explained as not giving importance to the tourism sector in Algeria. This makes it a sector that contributes to economic development, which works to provide permanent and temporary jobs, and most opportunities are employment in small and medium enterprises.

II.9 Determinants of tourism income in Algeria

Among the most important factors affecting tourism income that are discussed in previous studies, we find the following:

II.9.1 Number of tourists coming to Algeria:

The following table shows the tourist flow to Algeria during the period (2000–2019):

Table 4: (Number of tourists visiting Algeria: 2000–2019)

the years	2000	2005	2010	2015	2017	2018	2019
Algeria	0.866	1.443	2.070	1.710	2.5	2.6	2.3

The source : Word Bank (2000-2019)

Through the previous table, we note that Algeria recorded about 2.5 million tourists in 2017, the share of desert tourism, including 170 thousand tourists, and 20 thousand foreign tourists,

noting that the percentage increased compared to 2016 by (18%). Then it decreased in 2020 due to the COVID-19.

II.9.2 Government tourism spending

The impact of tourism spending on national income is the sum of the revenue generated during tourism spending cycles; which is called the effect of the tourism multiplier. Whose value depends on the relationship nature and the correlation degree between the tourism sector and other economic sectors? The value of the tourism multiplier varies from one country to another according to the degree of interdependence between the tourism sector and other economic sectors. The tourism multiplier is one of the many methods used to estimate the effects of tourism income on the national economy. The role of tourism income in national income is not limited to the initial increase in tourism income but extends to successive increases in society resulting from tourism income. Therefore, this variable will be measured by the total tourism expenditures that express the expense of tourists coming outside Algeria.

II.9.3 Inflation rate

Inflation is one of the most important economic concepts. According to its original content, it includes high prices for resources and investment goods used in the production process. Which increases the investment cost size, in a way that impedes the process of economic development. Also that Failure to control it would lead to distortions in the macroeconomic indicators; in addition to that, it would lead to the lost confidence of local and foreign economic agents in all the measures taken within the framework of economic policy in a country. It uses several indicators to measure this variable, But Usually What Complete Using the general index of consumer prices.

II.9.4 exchange rate

Considered an exchange rate is an essential tool in international exchanges. The exchange rate is defined as ‘the unit number that must be paid in one currency to obtain a unit in another currency’.

This factor is in foreign tourism only, as the tourist inside the country exercises the tourism spending process in the national currency in circulation as for foreign tourism. The tourist is required to replace his national currency with the country currency to which he is heading or with international money acceptable for circulation by the country to which the tourist will go. Because the lower the exchange rate of the domestic currency of the host countries have the relation to tourists, the higher the purchasing power of tourists arriving at them. Therefore Tourism demand increased. This variable is measured in real terms, the Algerian Dinar, against the US dollar.

III– Methods and Materials:

The quantitative analysis method used by researchers in the field of analysing the relationship nature, as it provides the researcher with indicators helps in a way that enhances descriptive analysis. On the practical side, we will try to use some standard tools to explain the relationship between the determinants of tourism income. The standard model built based on

a time series analysis (2000–2017), based on World Bank data. We have relied on this study on the method of joint integration (Engle-Granger and Johansen –. In explaining the relationship between the variables affect tourism income, starting with defining the study variables and studying the stability of chains using (ADF) then joint integration, and finally, the causal study of Granger –.

5.1 Standard model variables:

We will define at this point Variable that is expected to interact in the study model. Of course, there are no independent variables, since all variables are treated as an independent variable, according to a set of previous studies – Muchapondwa – .& Pimhidazi, 2011; Salleh, Siong-Hook, Ramachandran, and Shuib, 2008 Rajab Al Darwish and Ibrahim Mallawi, 2010).

Tourism income (tourism revenue) (RT);

Number of foreign arrivals annually (TNA);

Government tourism spending (ET);

The inflation rate in Algeria INF);

The real exchange rate of the Algerian dinar against the US dollar (RER).

From this, the standard form of the study can be drawn as follows:

$$RT = f(TNA, ET, INF, RER)$$

Let's find out mathematical formulas appropriate for its estimate we will enter the logarithm on the time series to become the logarithmic model as follows:

$$\text{Log}(RT) = \alpha_0 + \alpha_1 \text{Log}(TNA) + \alpha_2 \text{Log}(ET) + \alpha_3 \text{Log}(INF) + \alpha_4 \text{Log}(RER) + U_i$$

Whereas: $\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4$ are the model parameters and represent the resilience of tourism income determinants.

III- Results and discussion :

Notice the standard model is probabilistic, so an error limit is included U_i Which Acting on some variables that may affect tourism income, but challenging to measure, such as the psychological factors of individuals or other reasons.

5.2.1 Finding the relationship between the study variables:

This is done by calculating the correlation coefficient, and the results are shown in the following table:

Table 5: (Relationship between the study variables)

	LRT	LTNA	LET	LRER	LINF
LRT	1				
LTNA	.091341	1			
LET	.078532	.053232	1		
LRER	.070273	0.73888	0.62457	1	
LINF	-0.58742	-0.2548	-0.01254	-.42368	1

The source: output reviews.10

Through the table, it is found that:

- A strong and positive correlation between the number of foreign arrivals, tourism spending, effective real exchange rate and tourism income;
- A negative relationship between inflation and tourism income.

5.2.2 Time series stability test for study variables

According to the balanced integration methodology, first, we test the unit root (The Unit Root Test) to measure the time series stability of study variables, as it is necessary to measure the stability of time series for each variable separately. We do not get a false slope, and this requires testing the unit-roots, and it is considered a sophisticated Dickey-Fuller (Augmented Dickey-Fuller). An abbreviation of ADF is one of the most critical tests to see how stable the time series. The following table shows the results obtained:

Table 6: (Dickey-Fuller Stability Test Time Series of Study Variables)

Series	test	level			First deferent				
		model	T	1%	Proba	model	T value	1%	Proba
			value						
Lrt	ADF	1	1.3467	-2.5677	0.9521	4	-2.2547	-2.3257	0.0012
Lrt	ADF	2	-1.183	-4.5976	0.6521	5	-4.5214	-4.8752	0.0014
Lrt	ADF	3	-1.267	-3.6578	0.2257	6	-3.3254	-3.3778	0.0201
Ltna	ADF	1	1.448	-2.5697	0.824	4	-2.2578	-2.7789	0.0112
Ltna	ADF	2	-0.354	-4.8971	0.7478	5	-3.3568	-4.7057	0.0254
Ltna	ADF	3	-7.78	-	0.0000	6	-2.2547	-3.8415	0.0572
				3.7981*					
Lrer	ADF	1	2.352	-3.781*	0.8990	4	-1.9825	-2.2321	0.0418
Lrer	ADF	2	-1.422	-4.3778	0.4266	5	-2.3652	-4.2525	0.4325
Lrer	ADF	3	-1.332	-3.5780	0.6954	6	-2.8547	-3.8741	0.1454
Let	ADF	1	0.5213	-2.7789	0.8421	4	/	/	/
Let	ADF	2	-2.625	-4.478*	0.3247	5	0.1352**	0.7852	/
Let	ADF	3	-1.238	-3.872*	0.2542	6	0.1389**	0.2021	/
Linf	ADF	1	-1.989	-2.7057	0.0019	4	-3.9874	-2.6775	-4.061
Linf	ADF	2	-3.861	-4.565*	0.0103	5	-4.0029	-4.4652	0.0219
Linf	ADF	3	-3.562	-3.875*	0.0420	6	-3.8987	-3.7985	0.0027

The source: output reviews.10

* Fixed and moral direction

** represents the value (LM-Stat) where the method of (kpss) was used when the ADF and PP test indicated higher differences than the first differences; the test revealed the stability of the time series of tourism spending in the first difference.

Through the study results of the stability of the variable, we note that all the variables are unstable at the level (level), i.e. the presence of a unit root at the level of significance (1%). The strings are stabilized when taking the first differences, which means that the study variables are integrated from the first degree, and therefore joint integration can be made.

5.2.3 Common Integration Test

The theory of co-integration is based on the analysis of the non-static time series, where both Angel and Granger refer to the possibility of generating a still linear mixture of the non-static time series. If this static linear mixture can be generated, then these non-static time series. In this case, are considered to be integral of the same order. Thus, the level of variables can be used for the regression, and the regression, in this case, is not false. Given that strings are unstable at level, there is the possibility of a long-term relationship between study variables. The results are shown in the following table:

Table 7: (results Johansen co-integration test)

Prob**.	0.05 Critical Value	Trace Statistic	Eigen value	Hypothesized No. of CE(s)
0.0354	35.24178	42. 55712	0. 30984	There is no common integration *
0.2576	34.25478	24. 78453	0. 80326	There is at most one vector
0.2457	23.89758	17.25788	0.478453	There are two vectors at most
0.4258	19.23152	13.84925	0.287548	There are at most three vectors
0.4872	13.45787	5.78452	0.036587	There are at most four vectors

Max-eigenvalue test indicates 1 cointegrating eqn (s) at the 0.05 level

The source: output reviews.10

We note from the table results of the Johansson test and based on the method of impact and subjective values that there is a natural complementarity between the number of arrivals. The actual real exchange rate, inflation and government spending on tourism income at the level of 5%, but it is not possible to reject the imposition of non-existence at the level of moral 5%; This means a long-term balance relationship, despite the presence of a short-term imbalance. The long-standing relationship between the variables is given according to the following table:

Table 8: (results Appreciation Sample Linearity of the determinants of tourism income)

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.2023	1.547892	0.134814	0.187469	LTNA
0.0000	8.032147	0. 471686	1.435478	LET
0.9979	-0.000743	0.443485	-0.012211	LRER
0.0303	-2. 457664	0.057816	-0.171474	LINF
0.0015	-3. 165086	2.357892	-9.354786	C

The source: output reviews.10

From the above table, the long-term relationship between the variables is given as follows:

$$LRT = 0.18746*LTNA + 1.43547*LET - 0.01221*LRER - 0.17147*LINF - 9.35478 + \hat{U}$$

, $R^2=0.88$ $F=36.99$ $Prob=0.000$

This equation indicates the following:

- For the coefficient of the number of arrivals (b1). We note that his indication is positive. Therefore there is an effect between of the foreign tourists' number arriving on tourism income as the increase in the number of arrivals by one unit leads to an increase in tourism income by 18.74% with other factors remaining constant. this is consistent with the logic of the economic theory, so an increased flow of foreign tourists to Algeria, in the long run, will have a positive effect in increasing tourism income;
- It also showed a negative tendency to inflation (-0.1714), which confirms the negative impact of both the exchange rate and inflation on tourism income. This is a line with economic theory. Which considers that inflation is among the most important factors of economic instability that weaken tourism income due to the negatives it inflicts on the economy. It also showed a negative slope of the exchange rate (-0.0122). This explains the lower the real exchange rate of the Algerian dinar against the US dollar, the higher the tourist income by attracting the most significant possible number of foreign tourists.
- That the value Intake on her for a coefficient Selection It is estimated at 0.88 and is close to one. Meaning there is the explained variables cause a strong correlation between the study variables. Therefore (88%) of the changes that occur in income. While the rest (12%) is defined by other factors not included in the model and included in the error limit (\hat{U}).

5.2.4 Residual stability test

The Variables are integrated from the first degree; we move to the second step of the joint integration test. Which is the generation of a stable linear mixture, examining the stability of the residual chain (random errors), resulting in the regression model in the first step purpose ensuring the validity of the estimated model.

The stability test of an estimation residues series aims to search for the possibility of a long-term equilibrium relationship by applying a standard integration test between the studied variables. For this purpose, we used a test (kpss), and the results are shown in the following table.

Table 9: Test results (kpss) to check residual stability

Null Hypothesis:	Asymptotic critical values *: 1% level	LM-Stat
E is stationary	.0800214	0.179895

The source: output reviews.10

We observe through a test kpss that the value of LM-Stat is (0.179895) less than the tabular value at the significance level (1%). Therefore we accept the assumption of the non-

rule that the residual chain is stable, and this means that there is a typical complementarity relationship between the study variables, that is, a long-term relationship.

5.2.5 Granger Causality Test

This test enables us to know the direction of the relationship between tourism income, the number of arrivals, the real exchange rate, inflation and government tourism spending in one direction; i.e. income from the rest of the variables, or mutual path, meaning that each of the studied variables affects the other, and it is also possible. There should not be a causal relationship between them.

A causal test has been applied in two aspects: the impact of tourism income on study variables, and the effect of study variables on tourism income using the time slow number (2). The results are shown in the following table:

Table 10: (The results of a two-sided Grainger causality test)

Direction of causation	F-Stat	F-Tab	the decision
DLTNA does not Granger Cause DLRT	3.87458	0.1233	Not to refuse
DLRT does not Granger Cause DLTNA	1.1249	0.7768	Not to refuse
DLET does not Granger Cause DLRT	0.59879	0.4845	Not to refuse
DLRT does not Granger Cause DLET	1.39314	0.8756	Not to refuse
DLRER does not Granger Cause DLRT	1.87455	0.2056	Not to refuse
DLRT does not Granger Cause DLRER	1.39875	0.5155	Not to refuse
DLINF does not Granger Cause DLRT	1.32573	0.9349	Not to refuse
DLRT does not Granger Cause DLINF	1.01658	0.3900	Not to refuse

The source: output reviews.10

At Carrying out this test, the results were as shown in the above table. It is clear from the causality test that in the relationship of the impact of tourism income on the number of tourists the value of (calculated) at the number of time slows was equal to 2 equal to (1.124); which is higher than the value of (tabular F). Likewise, for the causal test between the number of foreign tourists and tourist income, the calculated value (F) at the number of time slowdowns was 2 equal to (3.874) which is greater than the value of (tabular F). From it, we can conclude that there is a reciprocal causal relationship between tourist income and the number of foreign tourists. This result applies to all study variables, where the results of the above table show a correlation causal relationship between all study variables, i.e. the existence of a mutual effect between them.

IV- Conclusion:

From an economic perspective, tourism is a productive sector that plays an important role in increasing national income and improving the balance of payments through foreign currencies that are realised. The study came to shed light on the determinants of tourism income in Algeria during the period (2000–2020). In the time when tourism is in Algeria a

vital unexploited and dependable sector within a comprehensive oil disengagement strategy. The study concluded a set of results as follows:

Demonstrated the study validates the positive relationship between the revenue from tourism and between both government tourism expenditures and the number of foreign arrivals. This pushes the importance of tourism as a leading sector that can move the rest of the sectors;

The existence of a common integration relationship between both the foreign arrivals number, government tourism spending, the real exchange rate, inflation, and tourism income is indicative for a long-term balance relationship. This can be explained by the necessity of Tourism planning to achieve the demands of comprehensive tourism development;

The use of external and internal temporal slowing variables in causality testing broadens the scope of analysis makes it more realistic and contributes to sound decision-making by officials in allocating economic resources for tourism;

Could the exchange rate system can effectively influence the attraction of foreign tourists if it is set as an instrument of control according to a deliberate monetary policy?

The study concluded with a set of recommendations:

The need for attention the government sector in the tourism sector through tourism policies and programs within the development strategy;

The work to enhance the sources of national income by deepening tourism investments to ensure sustainable income in the long term;

Necessity relying on quantitative methods in studying the tourism market to reach the most accurate results, especially those related to forecasting.

Intensification Standard studies of all aspects of tourism activity and its impact and its impact on the rest of the economic variables so that the true vision and the advancement of the tourism sector in Algeria can be clarified.

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Supplements

-Data source: <https://data.albankaldawli.org/country/algeria?view=chart>

- Study years: 2000-2017

Vector Autoregression Estimates

	GDP	NEXR	GOV	OIL
TRSM(-1)	0.398871 (0.19769) [2.01762]	-0.527304 (0.45312) [-1.16371]	-0.041327 (0.11467) [-0.36040]	0.147188 (1.25755) [0.11704]
TRSM(-2)	-0.003987 (0.20631) [-0.01933]	-0.015470 (0.47287) [-0.03272]	-0.038466 (0.11967) [-0.32145]	-0.763865 (1.31235) [-0.58206]
EXR(-1)	0.014188 (0.11330) [0.12522]	1.313371 (0.25969) [5.05738]	0.040555 (0.06572) [0.61709]	-0.227778 (0.72072) [-0.31604]
EXR(-2)	-0.000484 (0.12091) [-0.00401]	-0.318817 (0.27712) [-1.15046]	-0.056410 (0.07013) [-0.80436]	0.418180 (0.76909) [0.54373]
GOV(-1)	0.114611 (0.33620) [0.34090]	0.590594 (0.77059) [0.76641]	1.072441 (0.19501) [5.49939]	-0.621185 (2.13862) [-0.29046]
GOV(-2)	-0.214017 (0.32919) [-0.65013]	-0.126905 (0.75452) [-0.16819]	-0.375041 (0.19094) [-1.96415]	0.163633 (2.09400) [0.07814]
OIL(-1)	-0.019859 (0.04334) [-0.45816]	0.069651 (0.09935) [0.70108]	0.027270 (0.02514) [1.08466]	0.778562 (0.27572) [2.82375]
OIL(-2)	0.015887 (0.04306) [0.36893]	-0.049750 (0.09870) [-0.50407]	-9.66E-05 (0.02498) [-0.00387]	0.014350 (0.27391) [0.05239]
C	2.839261 (3.02864) [0.93747]	-4.725891 (6.94179) [-0.68079]	4.815406 (1.75673) [2.74112]	10.64707 (19.2655) [0.55265]
R-squared	0.248564	0.981953	0.817530	0.826258
Adj. R-squared	0.025916	0.976606	0.763465	0.774779
Sum sq. resid	135.9100	714.0010	45.72623	5499.379
S.E. equation	2.243591	5.142420	1.301370	14.27167
F-statistic	1.116398	183.6414	15.12121	16.05035
Log likelihood	-74.99431	-104.8544	-55.38655	-141.6015
Akaike AIC	4.666351	6.325242	3.577030	8.366749
Schwarz SC	5.062230	6.721122	3.972910	8.762628
Mean dependent	2.886651	52.03748	16.73085	41.86944
S.D. dependent	2.273241	33.62160	2.675797	30.07256
Determinant resid covariance (dof adj.)		18235.55		
Determinant resid covariance		5769.842		
Log likelihood		-360.2143		
Akaike information criterion		22.01191		
Schwarz criterion		23.59543		

