

	Average maintenance cost High energy consumption (starting temperature 70 ° C)	distribution (temperature difference at 8° C)	velocity ca. 0.4 m / s)	comfort
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## PROVIDING A MODEL TO ANALYZE THE IMPACT OF TOURISM DEVELOPMENT ON SUSTAINABLE ECONOMIC GROWTH: COMPARISON OF EUROPEAN DEVELOPED AND ASIAN DEVELOPING COUNTRIES

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**Abstract.** Studies and research have shown that many theorists and international organizations have already started to discuss the development of tourism due to the importance of tourism and its impact on economic growth and socio-cultural development. In some developed countries tourism development not only does not lead to economic growth, but even as a result of significant costs and a reduction in the level of social welfare in their society. However, recently a new approach has criticized both aspects of this relationship, which suggests that this is not a self-help relationship. In this regard, the purpose of this study is to determine whether economic growth in some countries has led to an increase in economic development due to the expansion of tourism activity over the past two decades or not. Therefore, algorithm sample of 24 countries including Iran has been used, indicating that this relationship exists in more developed countries and it makes sense of tourism as a driving force for economic development for less developed countries and even in developing countries.

**Keywords:** Tourism, Economic Development; Economic Sustainability; Structural Balance Model

**Introduction.** In recent decades, most international organizations have argued that tourism can be recognized as a tool for economic development in many parts of the world. In addition, many economic presses have recognized tourism's ability to do so. Nevertheless, in recent years, research has been done on the relationship between these two dimensions, which shows that in some countries tourism development not only does not lead to economic growth, but also as a consequence of significant costs and a reduction in the level of social welfare in their society (Ding Du1, Alan A. Lew, and Pin 2014). Therefore, there are two opposing theories regarding the concept of tourism as a tool for social economic progress. Tourism is not a magical and automatic solution for all countries to increase the level of prosperity, but it is not true that tourism has the ability to become a tool for progress. In fact, tourism has become an effective

means of progress in many areas that host a significant number of visitors; although this is definitely an economic activity that has created major constraints to develop this performance in some countries whether the growth of tourism activity in these countries over the past two decades has contributed to improving their economic development, and whether the relationship remains valid regardless of the country's economic and social status or is no longer valid. Therefore, the hypothesis of this study states that economic growth, which results from the expansion of tourism activities, will improve the economic situation of the country.

Expansion of economic activity positively affects the economic growth of a country. Nonetheless, the most important issue with regard to the country under review is whether this economic activity could lead to a surplus in the economic development of its population. However, the expansion of tourism that promotes economic, social and environmental prosperity in a society is not spontaneous. It is necessary for different stakeholders in tourism to improve the social and economic conditions of the population through the proper implementation of the policies and actions that lead to the economic growth. However, sometimes the relationship between the growth of economic activity and the development of tourism is facing serious constraints; as a result, many countries do not consider tourism as a means to overcome the low level of prosperity. Therefore, the purpose of public policy of the state should be in the following two ways: first, economic foundation for activities that have the potential for economic development, and second, the use of this economic growth as a basis for improving the socioeconomic situation of its people. The growth of tourism with the ultimate goal of increasing the socioeconomic level is a time consuming process (Figure 1).

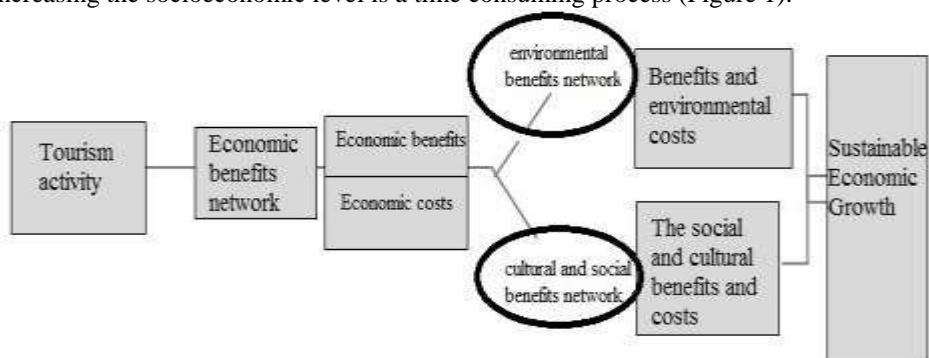


Figure 1 Developments in tourism growth and economic development

It seems that the relationship between economic growth and the development of tourism in countries with a low economic level is faced with much bigger constraints. However, tourism is considered an effective means of reducing poverty, especially in less developed countries. It has become one of the main priorities in these countries (UNECA 2010).

Research on the relationship between economic growth caused by tourism activity and the development of territories where tourism activities are carried out is not very common. García et al., (2013), after analyzing 117 countries, concluded that the growth of tourism in a country did not spur economic development itself, unless the conditions for this trend came to the conclusion that all interventions to achieve tourism growth are not effective for the promotion of a country's economy. Or in other words, there are variables for tourism growth that are more relevant to economic development than the rest. Therefore, it is essential to take steps to upgrade these factors. There is a significant overlap among the factors influencing the developments in tourism growth and economic development and other major aspects that attract tourism. For example, Asakar et al. (2013) indicated that infrastructure and the environment have a direct and positive impact on the process of generating income from tourism activities. Environmental resources are recognized as a major contributor to tourism competition (Mihalič 2013), but destination cannot rely solely on the beauty of its environment (Croe 2011). However, the impact of these factors varies on the analyzed countries, for the higher-income countries, the main factor is the main source of resources, while for lower-income countries, the most important factor is the globalization of their economies.

Without proper planning, tourism not only does not generate benefits, it can lead to environmental degradation, local displacement of societies and the creation of harmful employment. Accordingly, strategies, policies and regulations, along with an effective mechanism for tourism, are necessary not only to generate economic benefits, but also to prevent its environmental and social impacts. An empirical research aimed at determining the impact of tourism on the economic and social growth of the conditions that people live in over a long period of time. It is not logical to analyze the relationship between these two dimensions in the short period and it is very reasonable that research should cover a wider period of time. Therefore, since the original data was used for the 1988 till 1990, The time horizon of the study is from 1991 to 2015.

**Methodology.** Structural Equation Modeling (SEM) provides the ability to measure relationships between a set of independent variables and a set of dependent variables and relations between hidden variables (Blunch 2008; Iacobucci 2009; Kline 2011). These models include the implementation of multivariate statistical techniques for testing and estimating relationships using statistical data and qualitative assumptions about their causes. This model combines factor analysis with linear regression to test the degree of modulation of observed data for a hypothesis model. Also, the values of each relationship and, most importantly, the degree of statistics that represent the data in

proportion to the model are presented. The specification of the model is based on a graphical display in which, using different symbols, hypothetical statistical relationships occur between the observed variables and the hidden variables. The relationships between observed variables and hidden variables can also be expressed through the system of simultaneous equations. In this research, we consider two hidden variables:

An Internal Variable: Economic Growth  $X_1$

A hidden variable: Tourism development  $X_2$

This model of structural equations consists of two sub-models. In the present study, as mentioned earlier, tourism growth has been considered as an explanatory variable of economic development; nevertheless, it is clear that economic development in turn determines the arrival of tourists to destinations and, consequently, the growth of tourism in the country.

### Result and Discussion

First, for the six variables of tourism growth (DCP, DCE, ETI, FBK, DTE, and PSE) and nine economic development variables (HDI, LEB, IMR, GPC, DOI, PHY, PEH, ALR and PEE), relative changes between years of 1991 to 2015 were calculated individually for them as follows:

$$\text{The relative proportion} = \left( \frac{X_{2015} - X_{1991}}{X_{1991}} \right) \times 100$$

where  $X_{1991}$  and  $X_{2015}$  represent the value of the variable in the years 1991 and 2015. Subsequently, due to the heterogeneity of units used to measure the variables of tourism growth and economic development (billions of dollars, thousands of employees, years of life, number of physicians, percent, etc.), it is necessary to have a process of homogenizing the information used by relative variation (RV) normalization. This process of homogenization is performed by the following equation:

$$= \left( \frac{X - (\bar{X})}{(\sigma)} \right)$$

where  $(\bar{X})$  is average or expected value of relative changes, and  $(\sigma)$  is the standard deviation. In this way, not only the normalization of units of measurement of the variables obtained (because the normal values are meaningless, that is, in the unit of measurement are not expressed), but also overlap and use many different variables is done. Normal variables with expected value 0 and variance 1 avoid technical problems due to differences in the analyzed variables (heterogeneity of variance).

This trend is normalized with all the variables of tourism growth and economic development, except for two of them: infant mortality rate (IMR) and the distribution of income (DOI). As can be easily seen, contrary to what is happening in the rest of the world, these two variables have an inverse relationship with the country's economic development, because their high rates indicate less economic development and vice versa. As a result, for these two variables, we need to do a reverse normalization as follows:

$$= \left( \frac{(\bar{X}) - X}{(\sigma)} \right) = - \frac{X - (\bar{X})}{(\sigma)}$$

Therefore, standardized positive values are achieved in countries where lower rates of infant mortality and fair distribution of income (lower Gini index) are obtained, while the negative normalization values recorded in countries with high infant mortality and income distribution are below the permissible level (more Gini index).

After this, the previous preparation of the variables of tourism growth and economic development has been used from a structural equation model. It is considered to be an unrealistic hidden phenomenon (tourism growth) and an inner hidden factor (economic development). However, first, we analyzed the structure of correlation between economic growth variables when we analyzed them for identifying possible multiple-linear probabilities of these variables (Table 1). The statistical correlations between the six variables of tourism growth were investigated in this study. There are no problems in complete multiplex (correlation equal to 1) or multiplicative approximation (correlation close to 1) between variables which can be used to measure the hidden external variable of tourism growth.

Table 1 Structural correlation between normalized tourism development rates

Variables	DCP	DCE	ETI	FBK	DTE	PSE
DCP	1	304.(0.000)*	170.(041.)*	137.(101.)	336.(0.000)*	119.-(-156.)
DCE		1	066.(432.)	045.(590.)	205.(014.)*	134.-(-110.)
ETI			1	258.(002.)*	69.(413.)	175.-(-036.)*
FBK				1	187.(025.)*	104.(214.)
DTE					1	110.-(-190.)
PSE						1

Source: Writers based on SPSS calculations (\* Statistical correlation at 5% level)

Finally, before using the final model for estimating structural equations, we used factor analysis to determine if any of the 15 variables used in this work should be removed from the model or not. The load factor is less associated with FBK and PSE variables. Only five of the nine variables considered have a high loading factor compared to the first common factor, while the remaining four are roughly unrelated to this hidden dimension. After extracting successful factors, the most significant correlation occurs between the PPE variable and the second factor. The highest correlation of DOI variable was detected with the third factor. The maximum correlation of PHY and PEH variables occurs with factors

extracted by the fourth factor. Based on these results, it was decided to remove these four variables from the structural equation model. We used this equation to determine if there is a relationship between economic growth and the development of tourism between countries.

*Allocation of tourism development to economic growth*

Estimation of Structural Equation Model, which explains the variables of tourism development with economic growth variables, carried out with EQS software. This software is estimated with LISREL and AMOS, which are the main software used for this model of estimation. This study led to the calculation of non-standard parameters. The equations of the structural equation model reflecting the expansion of tourism with economic growth (details in Table 4) are described in Figure 3. According to Table 4, the values close to 0.6 represent the link between tourism expansion and economic growth from a strongly economic point of view.

**Allocation of tourism development to economic growth.** The results of the structural equation model that express tourism expansion variables with economic growth variables were carried out by EQS software. This software, along with LISREL and AMOS, which is the main software used to estimate the model, estimated that the structural equation model, the causal relationship between the expansion of tourism and economic growth and independent variables will be eliminated. This model estimates the Non-standard parameters, standard deviation results, standard estimates which are based on the observed variability of tourism development and economic growth (Table4). A model for estimating SEM samples which is provided by TCD, as a statistical fit will not provide the EQS of statistics.(Although the fit sample is measured by the different statistical data shown in Table 4, it can be evaluated). The results of the structural equation model suggest the development of tourism with economic growth (details in Table 4) described in Figure 3.

According to the statistical result which is shown in Table 4, it is clear that close values of 0.6, indicates the existence of the relationship between tourism expansion and economic growth. All recommended indicators are more than 0.9, but in some cases, for example, at present, the data and selected variables determine fitness. On the other hand, any statistical model and structural equation are not exceptional. Since they always ignore the variables that help improve the model, they will always remain incomplete. therefore, compared to other researches which are prioritized in the raw statistical model; this research has been prioritized based on an interpretation beyond which to find the best values of high goodness of fit values. As previously mentioned, the coolest estimate, according to the goals pursued by the present work, is consistent with the parameter  $\gamma_{11}$ . Moreover, it can be observed that this parameter estimates the Maximum non – standard equals 0.250 and their standard estimate equals 0.257. It is statistically significant at the 5% level. In addition, its sign is positive, which confirms that this hypothesis is taken as a starting point.As a result, the structural equation model is estimated and confirms the parameter estimates of  $\gamma_{11}$  which economic growth is conditional on the level of tourism development. in other words, it is shown that tourism activity and the main variables that describe it are positively associated with improving the economic growth of countries. However, the conclusion is very general. However, the data came from a large number of countries ( 24 ) around the worldWhether the causal relationship exists for all countries is not considered, because in some cases, international tourism is an important source of income, While the countries with the least developed are improving it (chau and turner 2009).

Table 2 Estimation of structural equation model (24 countries)

Standardized Estimates	The standard deviation	Non-standard estimate	Parameter
1.000	-	1.000	$\lambda_{11}^x$
0.921	0.071	0.921	$\lambda_{21}^x$
0.170	0.083	0.169	$\lambda_{31}^x$
0.137	0.082	0.136	$\lambda_{41}^x$
0.336	0.082	0.336	$\lambda_{51}^x$
-0.119	0.083	-0.119	$\lambda_{61}^x$
0.994	-	1.000	$\lambda_{11}^y$
0.380	0.102	0.391	$\lambda_{21}^y$
-0.178	0.090	-0.183	$\lambda_{31}^y$
-0.045	0.087	-0.047	$\lambda_{41}^y$
0.683-	0.131	0.695	$\lambda_{51}^y$
0.257-	0.081	0.250	$\gamma_{11}$

Reference: The authors are based on calculations performed using EQS  
Parameter value 1 is limited to model identification purposes

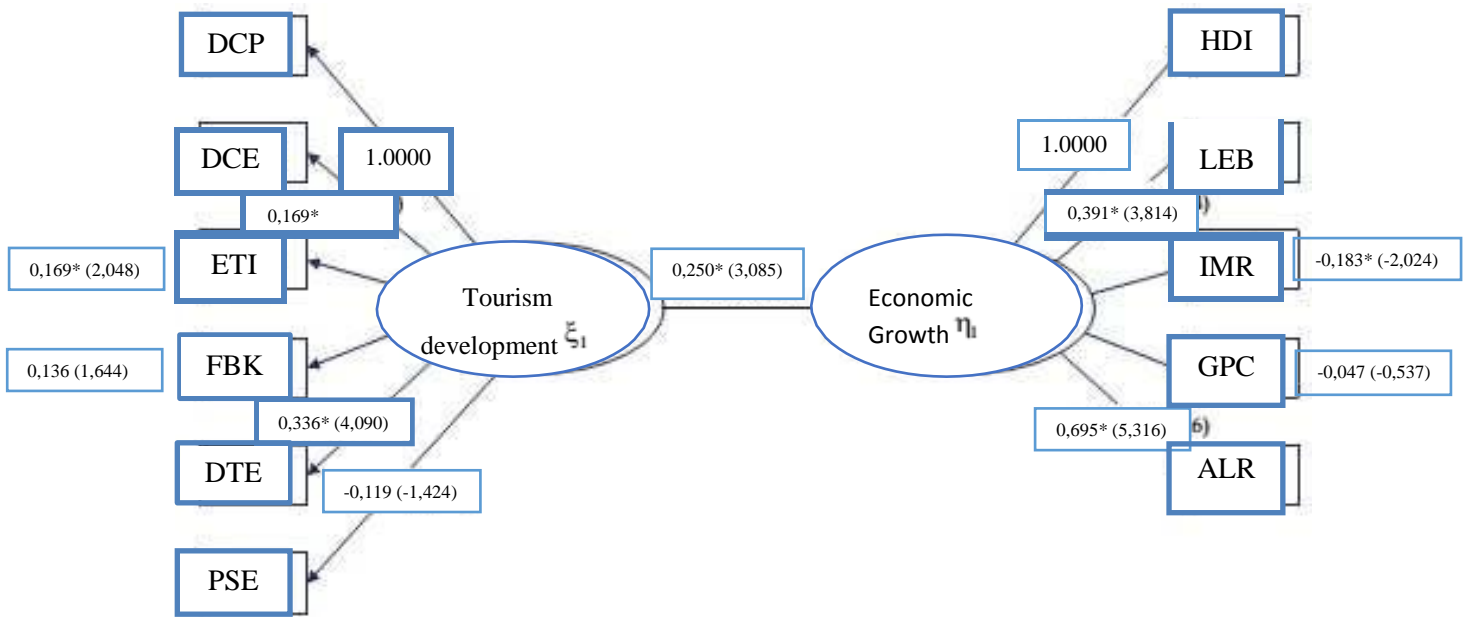


Figure 2 Estimation of proposed structural equation model (24 countries)

#### More developed and less developed countries

As outlined in the review of the theoretical framework, scientific literature and international organizations both consider tourism as a tool to reduce poverty in countries with low economic development levels. Although, in principle, this economic activity may be subject to further restrictions in order to improve the economic situation of these countries.

Therefore, the question expressed in this research is that does the country's previous level of economic growth determine the development of its tourism activity, which results in improving its growth?

To answer this question, we divided the total of 24 countries into two groups. A) Group of countries that were economically more developed, and B) group of those countries with lower levels of economic development. The Human Development Report, which includes more groupings for the classification of economic growth performance, is specifically based on four levels, very much, much, medium and low. According to the report (UNDP 2007), the first group refers to developed countries and the next three to developing countries. But in this research, only two groups of countries have been followed according to the same method.

To do this grouping, and given the multiplier nature of economic growth (In the present study, the approach to measuring economic growth was achieved through nine variables)(Pulido-Fernández and SánchezRivero (2009) and it was selected based on the principles of component factor analysis ( Pallant 2001; Tabachnick and Fidell , 1996 ).Hence, nine standard economic growth variables are included in this work (considering the normalization of the inverse of IMR and DOI variables) and considering their correlation with the normalized economic growth variables, two intermediate profiles have been made that their mathematical expressions are as follows.

$$\begin{aligned} \xi_1 = & 0.938 * HDI + 0.916 * LEB + 0.915 * IMR \\ & + 0.640 * GPC + 0.059 * DOI + 0.579 * PHY + \\ & 0.572 * PEH + 0.863 * ALR + 0.280 * PEE \end{aligned}$$

$$\begin{aligned} \eta_1 = & 0.259 * HDI + 0.272 * LEB + 0.221 * IMR \\ & + 0.389 * GPC + 0.864 * DOI + 0.601 * PHY \\ & + 0.515 * PEH + 0.219 * ALR + 0.496 * PEE \end{aligned}$$

From these intermediate profiles, and taking into account the value of the first properties of the matrix X 'X (5.546 and 0.917,), a traditional index was obtained by heaverizing each previously calculated intermediate profile based on these characteristics. Therefore, the final syntax is as follows

$$= 0.858 * \xi_1 + 0.142 * \eta_1$$

Using the transformation of Calsamiglia (1990), this syntactic index was ultimately measured in the range of 0 to 100 . For the amount 0=100

$$= \left( \frac{\xi_1}{\xi_1 + \frac{\eta_1 - \xi_1}{2}} \right) = \begin{cases} 1 + \frac{\varphi - 1}{2} \exp(\xi_1) & < 0 \\ \varphi + \frac{\varphi - 1}{2} \exp(\xi_1) & \geq 0 \end{cases}$$

Favorable grouping in this study, which defines the two groups of countries of the same size, the upper middle is 57.47, it is considered as a shortcut for the classification of a group A or B

The use of the mean as a shortcut is responsible for defining two groups of countries; it is possible to use it to decide on the definition of two equal-sized groups, possible comparisons between estimates of structural equation models. Moreover, the identification of these groups merely aims to explain, not in case confirmation. This technique eliminates the use of other classification techniques such as separating analysis which can greatly compile and classify comparisons.

The countries that form the A group are shown in Table 5 with a larger amount of the synthetic growth rate index. Group B countries with a synthetic growth rate profile are also shown in Table 6.

The goal is to re-analyze the causal relationship between tourism development and economic growth in both groups. In these two groups, the structural equation model is used to identify whether the previous obtained estimates remain the same. As is the case in all of the countries considered being together or in the opposite direction, important changes are taking place in the view of the effects estimated in both groups (Result in table 2). Figure 4 shows the maximum exponential approximation of the structural equation model for group A. And Figure 4 estimates the exponential model of the structural equation model for group B

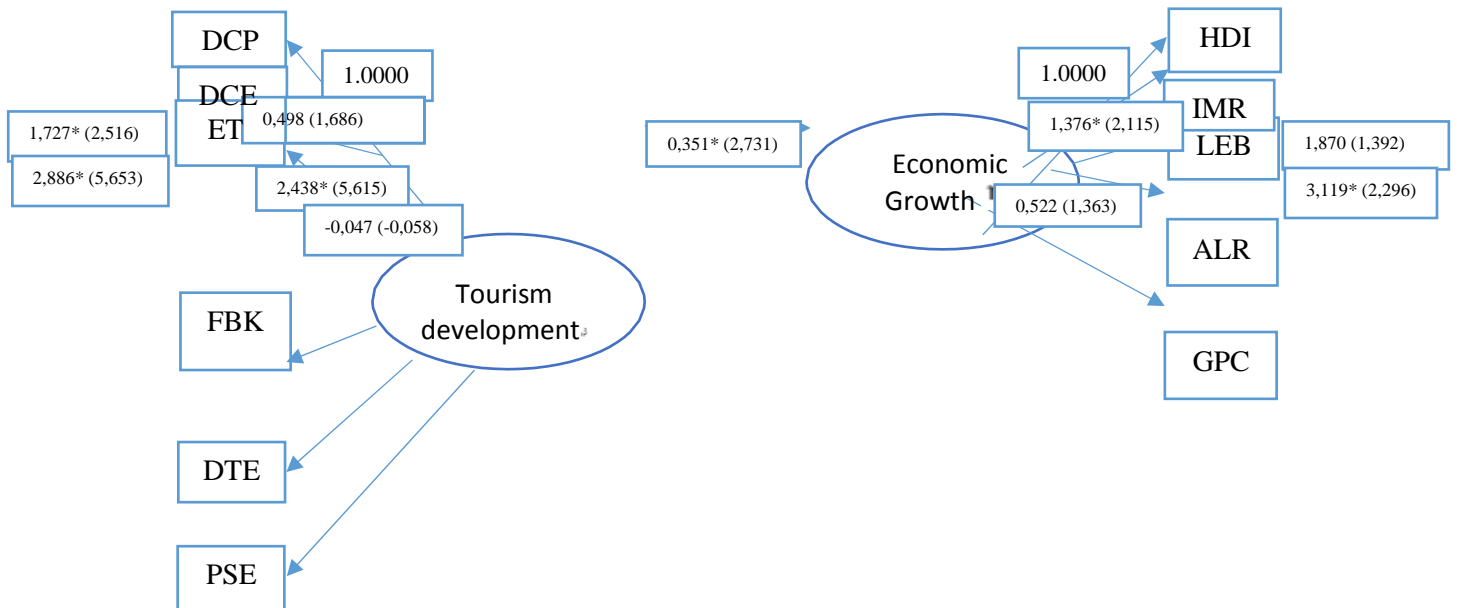


Figure 3 Model estimation of the proposed structural equation model (Group A)

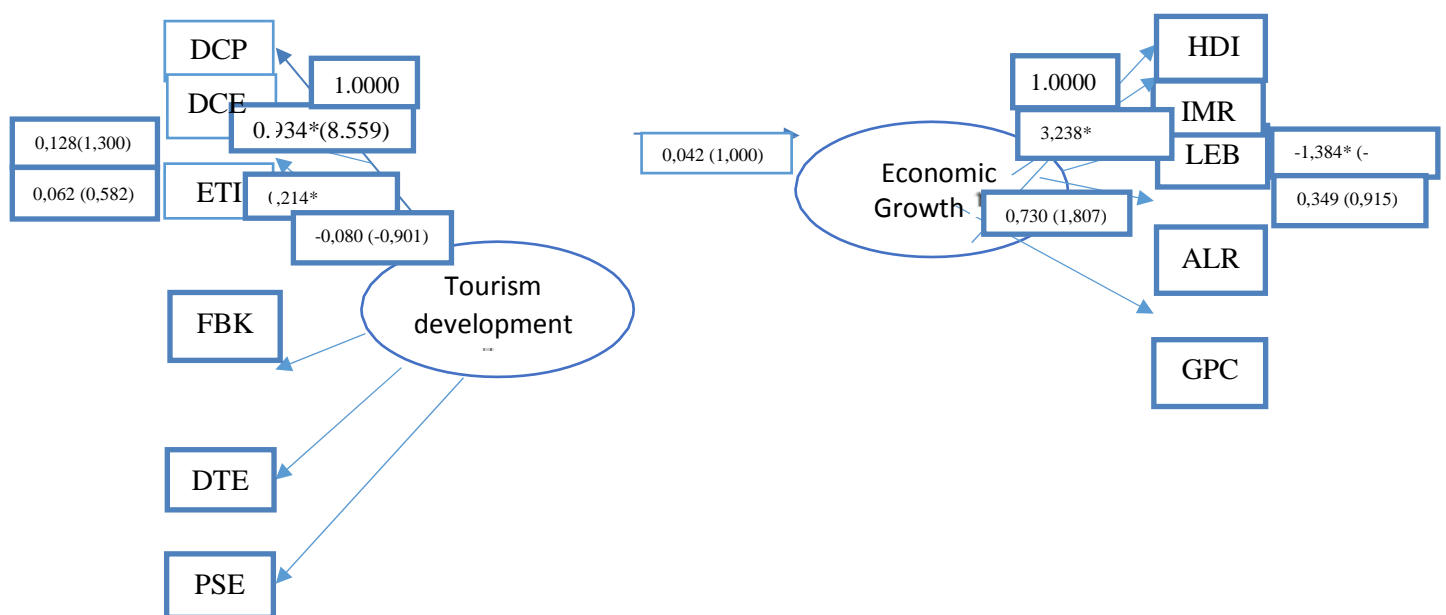


Figure 4 Model estimation of the proposed structural equation model (Group B)

Economic development can be achieved through various economic activities (Providing its expansion is important enough to have a significant impact on overall economic growth). Hence, it has been confirmed that tourism is their economic activity (In some countries, these activities are becoming the main pillar of their economic activity).

Therefore, tourism is like any economic activity that can affect the global economic growth of the economy, it must be allowed real growth processes. However, it has been discovered that literature, has two different points of view about the relation between these two dimensions. In this dichotomy, the first question to be answered is whether there is a link between the development of a country's tourism and an increase in the level of economic growth or not. In this case, the study shows that SEM is estimated for all countries covered by the sample, Tourism development has a positive impact on economic growth. Certainly, the hypothesis that the economic development experienced by some countries has been proven to affect the rise in the level of economic growth they have experienced. However, the analyzed examples which include a large number of countries are completely different with socioeconomic structures such as Per capita income, infrastructure, training, or instability of economic activity. Hence The causal relationship between tourism development and economic growth in both developed and underdeveloped countries has been tested. Further analysis then was carried out to identify the relationship between tourism development and economic growth, regardless of the country's level of growth. This analysis concludes that two groups of countries may be distinguished with different behaviors.

Table 3 Countries in Group A

Country	Ranking
Sweden (99.97)	1
France (99.96)	2
Germany (99.95)	3
Italy (99.83)	4
Spain (99.76)	5
Qatar (99.44)	6
Kuwait (99.08)	7
Russia (99.02)	8
Czech Republic (98.63)	9
Azerbaijan (90.40)	10
Saudi Arabia (86.72)	11
Malaysia (81.82)	12

Table 4 Countries in Group B

Country	Ranking
Thailand (55.06)	1
Oman (41.22)	2
China (34.23)	3
Turkey (27.33)	4
Vietnam (16.54)	5
Iran (13.63)	6
Egypt (6.86)	7
India (1.88)	8
Yemen (1.80)	9
Pakistan (1.40)	10
Sudan (1.08)	11
Nigeria (1.00)	12

Group A: Countries that showed more of the synthetic index of economic growth in 1991. It is proven that tourism development will lead to improved economic growth

Group B: Countries with a smaller amount than the Synthetic Economic Growth Profile in 1991. In this group, tourism development did not have an effect on improving their economic growth.

First, the result is that an increase in the flow of tourist destinations leads to the expansion of tourism and consequently to the development of tourism, which, moreover, contributes to the improvement of socio-economic conditions only those countries with higher levels of growth

The increased level of developed countries, thanks to the growth of tourism in all variables that were measured in this study for economic growth in these countries (For example, the profile of human growth, life expectancy at birth, child mortality rate under one year, GDP per person, income distribution, medical expenses, general health expenditures, adult literacy rates and general education costs)

Similarly, there are countries with lower rates of economic growth in the year in which the study began (Countries that form the B group)(1991) where tourism development, despite having a positive impact on the country's economic growth, has not become a tool that can increase the ability to raise the country's welfare.

In each case, based on the results obtained, the approach of some organizations and international institutions ( UN Conference on Trade and Growth, the United Nations Economic Commission for Africa or the World Tourism Organization ( UNWTO ) , which has to be considered an effective tool to reduce poverty in the backward countries. Despite the efforts of these organizations to determine that there is such a fact (UNWTO 2010), the study shows that tourism development in these countries has not exactly improved economic growth. As a matter of fact, we must criticize the approaches that tourism suggests as a means of growth, poverty reduction and increased investment efforts . Consequently, given the fact that less developed countries have fewer opportunities to promote tourism development in a desirable way is possible in countries, Tourism to be considered in comparison with other economic activities to improve the living conditions of local populations.

Hence, the commitment to tourism will cost a lot to these countries without securing the real impact of the country's economic growth, For example, a very different case of foreign direct investment.

**Conclusion.** Finally, in this research, the link between tourism development and economic growth and the fact that this relationship is observed only within a particular group of countries has been evaluated. In recent years, a lot of work has been done to identify this relationship but in terms of global vision and theory, the factors that determine tourism development are becoming a tool for economic growth. The results of the research and studies of this paper are part of a new research and provide sufficient data for discussion and attract attention to the need for further improvement in the identification and analysis of these factors.

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