MODEL OF WORLD TOURISM IN THE PERIOD 2000 - 2036

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Abstract - The research topic in this paper is world tourism. The aim of the analysis and evaluation of individual model variables and the growth rates obtained was to scientifically formulate the results of research through direct rates of the most important theoretical regularities of the world tourism in the period from 2000 to 2036. Appropriate combinations of numerous scientific methods have been used, of which only the most important ones are mentioned: methods of analysis and synthesis, inductive and deductive method, descriptive method, comparative method, statistical and mathematical method, modeling method (growth matrix), methods of evidence and objections. The basic scientific hypothesis has been proven through direct rates of the selected model variables. Thus, a scientifically based confirmation of a scientific hypothesis has been provided: "Scientific insight into world tourism can suggest a new model of world tourism for the period 2000 to 2036".

Keywords - World Tourist Regions, Development Model, Matrix Account

I. INTRODUCTION

The basic scientific hypothesis of this paper is: "Scientific insights into world tourism can suggest a new model of world tourism for the period 2000-2036".
In order to be able to initiate the building of world tourism model for the period 2000-2036, it is necessary to determine the most important model variables. At the same time, direct rates can be used to monitor changes in the intensity of variables and their structural relationships. Based on the mental-verbal knowledge of the selected model variables and their values for the year 2000, the years of 2018 and 2036 will be determined using the matrix account of the direct value of the following selected model variables: Europe, Asia, Pacific, North and South America, Africa, and the Middle East.
The aim of the study is to develop a world tourism model based on a theoretical insight into the development of world tourism and the available statistical data on the analysis of world tourism indicators by tourist regions, in order to observe trends and perform comparative analysis among tourism regions. In addition, the world tourism supply and demand changes will be analyzed, identifying the tourism offer activity to respond to the increasingly complex and diverse requirements of tourism demand in the globalized environment. All this will create the preconditions for the quantification of variables and the mathematical structure of the world tourism model from 2000 to 2036.
Today, there are more and more motives of travel related to active vacations in destinations with preserved natural resources and offering a healthy lifestyle and nutrition as well as getting acquainted with cultural and historical heritage. Development of selective forms of tourism has enabled all the specific requirements and needs of contemporary tourism demand to be satisfied. Although this type of tourist activity will become significant in the future, mass tourism will continue to have a traditionally high share. The international tourism market is in constant development and change. Tourist traffic information published by world tourist organizations indicates a dynamic growth and development.

II. MODERN TOURISM FEATURES

Tourism represents a very complex social and economic phenomenon. The structure of this phenomenon requires a complicated organization that makes the tourist system. It also represents a complex socio-economic phenomenon with a very strong influence on virtually all the activities of the environment where it develops. [12] For many people, tourism is a kind of holiday or recreation. Its contribution to the educational, cultural and health sector is often emphasized. Tourism also affects labor productivity, payroll balance, etc. Tourism is considered to be a highly complex and heterogeneous phenomenon. [7]
Managing a tourist destination has an important role in its economic growth and development. In order to let a tourist destination gain and keep a competitive advantage, it is important to adapt to the uncertain environment and to respond by appropriate measures to the arisen changes. [4] Due to the demands of modern tourists and numerous changes happening on a daily basis in the tourist market, it is important to promote tourism destinations, find out the wishes and needs of tourists, and attract them through the media. [6]
It is important to emphasize that the changes in the emitting tourist market are characterized by globalization, segmentation, informatization, and ever increasing demands of tourists who are more informed and familiar with the price and quality ratio, which necessitates the reorganization of business and process functions in order to put the process functions

in the first place, and the determination of business functions supporting these core process activities. [2]
The characteristics of tourism at present are as follows: differentiated and segment tourism, different types of travel, dynamic and active tourist, experience, activity and learning, ecologically aware tourist, shorter and more frequent holidays several times a year, and custom-made packages tailored to the buyer's wishes. [4]

III. MODERN TOURISM FUTURE

It is believed that in the future new technologies will play a key role in the hotel sector, but also in travel and tourism in general. Among the various trends in the development, autonomous technology emerges as particularly applicable to tourism, which includes various conversational technologies such as “digital personal assistant”, chatbot or interactive devices to physical robots. [12] For example, the use of robots in tourism can move from robots that deliver luggage in hotels, rolling behind guests, to fully autonomous air transport of baggage. Another type of autonomous technology is "Send Feedback Tool", which learns from user searches, reviews and ratings of certain online services to create appropriate suggestions for new hotels and destinations. [8]
In the future, several types of specific forms of tourism will have the greatest annual growth: cultural, health, business, elite, nautical, rural and gastronomic tourism, sports and recreational, etc. [6]
Cultural tourism will have the largest growth in general in the world, almost double in comparison to classical tourism. It is exploiting cultural heritage for tourist purposes that helps to preserve and recognize it. In addition, by recognition of the value of culture in tourism the profit is made, which makes culture and cultural heritage economically viable, and thus brings the benefit to both the state and its population. [4]
The following are the main trends in health tourism:[8]

- the growth of private healthcare cities - Foreign investment significantly contributes to the development of tourist health destinations. Namely, patients from different countries attract different institutions that offer both health and hospitality;
- Asian expansion - It is expected that the number of medical tourists in Asia will increase as Asian countries offer high standards of hospitality. In addition, these countries are continually investing in the latest trends in technology, and medical care is much cheaper in Asia than in other areas;
- Training of medical tourism professionals - Growth and development of medical tourism leads to the demand for qualified health care staff. This includes doctors, surgeons, translators, physiotherapists, and other assistants. Medical schools and training centers are also expected to grow with the need for these specialists to learn specialized procedures that medical tourists prefer, which is particularly emphasized through aesthetic surgery;
- Establishing new destinations - Countries that are famous for medical tourism will have new competition. The United Arab Emirates, Greece, and Taiwan have shown a positive growth over the past years partly because of their beautiful landscapes that patients also look forward to during their visits.

Relevant market trends in the domain of business tourism products are further growth, integration with other tourism products, mergers and professional management, technology and ecological orientation. [4] Significant development is also experienced by the world of luxury tourism, which goes with a great transformation that will provide their consumers with a completely different experience in the coming years. Luxury travels make up just 7 percent of all the international travel, but account for 20 percent of the total global tourism spending due to its high prices. It is estimated that the luxury tourism market could rise to $ 1,154 billion by 2022, as the average passenger in this segment spends six times more than regular passengers. [7]

IV. TOURIST REGIONALIZATION OF THE WORLD

According to the World Trade Organization (WTO), the world is organized in a total of six tourist regions: Europe, Africa, the Middle East, South Asia, East Asia with the Pacific, and America. Apart from this division not coinciding with continents, the name of particular items referred to by the names of continents do not always refer to the continent designated. [9]

The territorial organization of the WTO, given the way it is established, has a fairly clear spatial logic and addresses the needs of the tourism industry. Since these data have produced numerous high-quality and detailed professional analyses of different aspects of tourism phenomena in individual regions, without which it is impossible to monitor the changes in world tourism, WTO regionalization can be considered to be successful although there are certain illogicalities. Global tourism is characterized first of all by the mobility of contemporary tourists on the wings of increasingly modern traffic lanes, fast means of transportation, and lower prices of services and products that accompany tourism. [11]

The analysis of tourist traffic by regions of the world has started with the number of tourist arrivals in the world from 2000 to 2017 to show progress in tourism development in the last two decades. Chart 1 shows a significant progress since in the 20-year period the number of tourists has doubled on a global level.

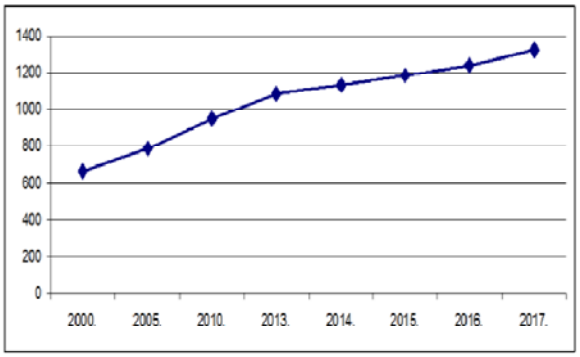


Chart 1: Tourist arrivals to world tourist regions from 2000 to 2017 (in millions) [8]

Comparing the arrival of tourists in the tourist regions of the world, it is useful to see Table 1 and Chart 1. It can be seen that in the period from 2000 to 2018 there was a constant growth in the number of tourists in all the regions of the world.

	2000	2005	2010	2015	2017	2018
Europe	392	452	487	605	674	712
Asia and Pacifi	110	154	208	284	323	342
S. & N. Americ	106	108	123	159	174	180
Africa	26	34	50	53	62	67
Middle East	22	33	55	58	57	63
Total	656	781	923	1,159	1,29	1,364

Table 1: International tourist arrivals by region (in millions) [9]

In the mid-2018, Europe has the largest share among world regions (50%). Europe is followed by Asia and the Pacific with 25%, and South and North America with 16%. The lowest share is recorded by Africa with 5%, and the Middle East with a share of 4%. [10] However, Europe's participation in tourism in the whole world in 2000 was 60%. It is clear that the number of tourists visiting Europe will increase in absolute numbers and will be the highest of all the tourist regions in the world for years to come, but their share in the world percentage of tourist travel will fall.

V. BUILDING OF 2000-2036 WORLD TOURISM MODEL

As already mentioned, the basic variables of the world tourism model from 2000 to 2036 are: Europe, Asia and the Pacific, North America and South America, Africa, and the Middle East.

The quantification of the model variables will take into account the synergistic effect of the following scientific aspects: theoretical aspects of certain model variables, value and the significance of the model variables in the period analyzed (2000 and 2018) and the expected values of the variables in 2036. (Table 2). Zero represents an inherent value, understandable in itself. The value of 100 is the one that all the tourist regions of the world strive for, i.e. that all tourists traveling the world in a certain year come exactly to that region. It is obvious that all the tourism regions compete with each other.

Variables of world tourism 2000-2036		Inputs y			Difference (rise/fall)
		2000	2018	2036	2036/00
1.	Europe	60	50	40	-20
2.	Asia and Pacific	18	25	40	22
3.	North America and South America	16	16	17	1
4.	Africa	4	5	6	2
5.	Middle East	3	4	5	2

Table 2: Number of points of world tourism 2000-2036 model variables
Source: the Authors

Model's vector: $\Delta Y_{2036} \begin{bmatrix} -20 \\ 22 \\ 1 \\ 2 \\ 2 \end{bmatrix}$

Matrix account:

$$R_{2020} \begin{bmatrix} \frac{-20}{40} & \frac{-20}{40} & \frac{-20}{17} & \frac{-20}{6} & \frac{-20}{5} \\ \frac{22}{40} & \frac{22}{40} & \frac{22}{17} & \frac{22}{6} & \frac{22}{5} \\ \frac{1}{40} & \frac{1}{40} & \frac{1}{17} & \frac{1}{6} & \frac{1}{5} \\ \frac{2}{40} & \frac{2}{40} & \frac{2}{17} & \frac{2}{6} & \frac{2}{5} \\ \frac{2}{40} & \frac{2}{40} & \frac{2}{17} & \frac{2}{6} & \frac{2}{5} \end{bmatrix}$$

; $R_{2020} \begin{bmatrix} -0{,}500 & -0{,}500 & -1{,}176 & -3{,}333 & -4{,}00 \\ 0{,}550 & 0{,}550 & 1{,}294 & 3{,}667 & 4{,}400 \\ 0{,}250 & 0{,}250 & 0{,}059 & 0{,}167 & 0{,}200 \\ 0{,}050 & 0{,}050 & 0{,}118 & 0{,}333 & 0{,}400 \\ 0{,}050 & 0{,}050 & 0{,}118 & 0{,}333 & 0{,}400 \end{bmatrix}$

From the matrix account, Table 3 follows.

Model variables	1.	2.	3.	4.	5.
1	-50.0	-50.0	-117.6	-333.3	-400.0
2	50.0	50.0	117.6	333.3	400.0
3	25.0	25.0	5.9	16.7	20.0
4	5.0	5.0	11.8	33.3	40.0
5	5.0	5.0	11.8	33.3	40.0

Table 3: Number of points of direct and indirect rates of 2000-2036 world tourism model

From Table 3, it is apparent that the point values of the selected variables, the direct rates of the world tourism model from 2000 to 2036, lie diagonally and are -50.0 to 50.0.

The values of the indirect rates of world tourism model from 2000 to 2036 on an index scale of 0 to 100, due to space constraints, will not be commented on in this paper.

There are differences in the values of the points in the last column (Difference) in Table 2 and the values of the direct rates of the world tourism model from 2000 to 2036 by the diagonal in Table 3.

Differences arise because of the mutual influence (competition) of the world's tourist regions. Only Europe will record a decline in world tourism from 2000 to 2036, up to 50%. All other regions in the world will record growth.

It can be concluded that the underlying scientific hypothesis has been demonstrated through direct rates of selected model variables. This means that the hypothetical values of all model variables are also realistically determined. This confirms the hypothesis: "Scientific insight into the world tourism allows building of a new model of world tourism for the period 2000 to 2036".

VI. CONCLUSIONS

A new model of world tourism for the period from 2000 to 2036 has been proposed in the paper. Also, through direct rates and using matrix account, the basic hypothesis of the paper has been proven: "Scientific insight into the world tourism allows to propose a new model of world tourism for the period 2000-2036."

Evaluation of the model variables took into account the synergistic effect of the following aspects: scientific theoretical aspects of individual model's variables, value and significance of the model variables in the period analyzed in the researches, i.e. for the years 2000 and 2018, and expected values of the variables in 2036.

The analysis and evaluation of the individual model variables and the growth rates obtained had the aim (purpose) to formulate the research results, the most important theoretical regularities. The underlying hypothesis of this paper was demonstrated by the direct rates of the above mentioned model variables. Thus, the hypothesis was confirmed. The research has given direct rates of world tourism model from 2000 to 2036: Europe (-50), Asia and the Pacific (50), North America and South America (5, 9), Africa (33.3) and the Middle East (40). Changes that take place in the international tourism market open up opportunities and increase the chances of developing new tourism products, but also the emergence of some new destinations. However, the fact is that tourism flows are influenced by numerous factors, economic and non-economic in nature, and that their movement can often be difficult to foresee. However, according to the analysis presented in the paper, a further increase in the number of tourists in all regions is expected. Due to changing economic conditions, changed behavior of the consumers and new technologies, new markets will emerge, and this will also change the composition of the tourist population, which will be reflected by increasing the share of elderly people in tourism. Greater emphasis will be placed on individual vacations, educational holidays, and active recreation. Increasing awareness of the need for environmental protection will affect the planning policy and tourism demand. Nature, which is usually the main tourist resource, will increasingly disappear and become more sensitive. An ecological, long-term approach to tourism planning will be required.

According to the absolute numbers of tourists visiting Europe, their number will grow and be the largest of all tourist regions in the world for years to come. Nevertheless, their share of the world's percentages of tourist travel will fall. In the future, it will be Asia and the Pacific as well as the Middle East to specially benefit from tourism.

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