

## Conference Paper

# Sustainable Tourism in the Context of Environmental Economics

Ivana Ilić<sup>1</sup> and Zorana Kostić<sup>2</sup><sup>1</sup>Teaching Assistant, Faculty of Economics, University of Niš<sup>2</sup>Assistant Professor, Faculty of Mechanical Engineering, University of Niš**ORCID:**Ivana Ilić: <http://orcid.org/>**Abstract**

Increasing international focus on sustainable development have highlighted the need for a new paradigm of sustainable development in the tourism industry. Tourism, more than any other activity, depends on the quality of natural and social resources. The rapid spread of Covid-19 and its already palpable impact on the travel and tourism industry has highlighted the increasing complexity of the interconnections in the world. Sustainable tourism takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors and the industry. The subject of this paper was the sustainable development of tourism in the context of environmental economics. The main goal of this research was to examine the interplay between tourism and the environment within the context of the pandemic. The methodological basis was the Travel and Tourism Competitiveness Index (TTCI), with a particular focus on environmental sustainability. The paper included an impact assessment of Covid-19 on sustainable tourism and forward-looking scenarios for 2021-2024. One of the key considerations was a SWOT analysis of the tourism industry within the pandemic conditions. Global recovery scenarios were discussed, as was the economic impact of Covid-19 on tourism in the European Union. Finally, this research put forward policy recommendations for governments to avert the worst effects and facilitate recovery in this field.

**Keywords:** tourism economics, environmental sustainability, Travel and Tourism Competitiveness Index (TTCI), European Union, Covid-19, crisis management

**Jel CLASSIFICATION codes:** O44, Z39, Q59

## 1. Introduction

Environmental economics is the application of the principles of economics to the study of how environmental and natural resources are developed and managed. It uses economic analyses to improve the effectiveness of its environmental policies. Environmental economics integrates environmental and ecological systems into economic models. It evaluates how changes influence the positive predictions and normative recommendations of economic analysis. However, sustainability of activity is as important as economic efficiency and that these two objectives may not always be mutually consistent. Environmental economics is an evolving discipline that developed as a result of environmental damage caused by economic activities and the pursuit of sustainable

Corresponding Author:

Ivana Ilić

ivana.ilic@eknfak.ni.ac.rs

Published: 30 November 2021

Publishing services provided by  
Knowledge E

© Ivana Ilić and Zorana

Kostić. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Selection and Peer-review under the responsibility of the EBEEC Conference Committee.

 OPEN ACCESS

development. Also, it is concerned with the design of environmental policies and their implementation. Environmental economics was premised on the neoclassical approach dealing with: inefficient natural resource allocation, market failure, negative externalities, and management of public goods.

Tourism is one of the areas derived from environmental systems that people care about due to it enhance human well being. Environmental policies are needed to address critical issues. In this regard, suitable environmental policy is necessary for addressing tourism issues that have arisen caused by Covid-19 crisis and also for avoiding environmental threats. The tourism industry has been characterized by an extremely favorable evolution in the last decade. However, tourism has been severely affected since the beginning of the crisis caused by Covid-19 crisis, and as the situation escalates, there are clear signs that the impact will be greater than initially estimated. Firstly, this paper highlights the main elements of the impact of Covid-19 crisis on the tourism sector (Table 1), which has significantly determined the sustainability of this sector in the next period.

TABLE 1: Global and Europe Economic Impact from Covid-19

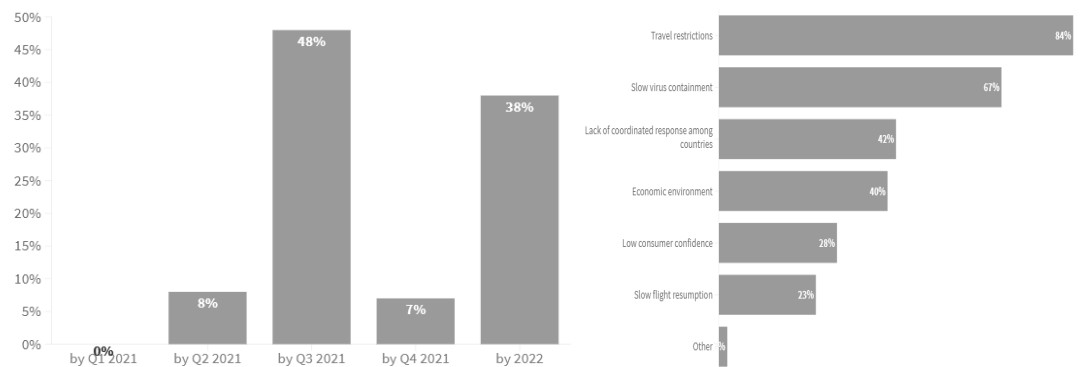
Global level	Already Impacted		If no improvement	
Travel & Tourism Jobs Lost in 2020	142.6 Million	43%↓	174.4 Million	53%↓
Travel & Tourism GDP Loss in 2020	3,815 Billion USD	43%↓	4,711 Billion USD	53%↓
Global Arrivals Assumptions	International 65%↓	Domestic33%↓	International 73%↓	Domestic45%↓
Europe level	Already Impacted		If no improvement	
Travel & Tourism Jobs Lost in 2020	18.8 Million	51%↓	23.2 Million	63%↓
Travel & Tourism GDP Loss in 2020	1,025 Billion USD	51%↓	1,268 Billion USD	63%↓
Global Arrivals Assumptions	International 62%↓	Domestic37%↓	International 69%↓	Domestic51%↓

Source: Systematization of authors according to World Travel and Tourism Council data from 2020.

The economic vulnerability of the international tourism market has been encountered on several levels and has led to several directions, particularly by affecting tourism demand. Furthermore, in the tourism industry, the crisis is specific to the sector which amplifies the impact of the epidemic: vulnerable categories who are an important part of the workforce, the importance of work for local communities and its multiplying effects, seasonality and intensive work activity. The main measures recommended by international organizations in this the field concern two major directions: 1) identifying solutions and mechanisms for companies during this crisis period; 2) support provided to employees directly affected by the situation [1]. Support should be given to build more sustainable tourism ecosystem that includes changes in the infrastructure for more environmentally friendly sector, spreading the offer to different destinations and guaranteeing the quality of the product offer. Training the workforce to adopt a greener

code of conduct and to address the challenges of the digital age is also key priorities [2].

A majority of experts sees a rebound in international tourism in 2021, in particular by the third quarter 2021, while around 20% expects it to occur only in 2022 (Graph 1). As given in Graph 1, travel restrictions (84%) are the main barrier weighing on the recovery of international tourism, along with slow virus containment (67%), economic environment (40%) and low consumer confidence (28%).



**Figure 1:** The main factors of a rebound in tourism industry by 2022 (Source: UNWTO, 2020. Available at: <https://www.unwto.org/impact-assessment-of-the-covid-19-outbreak-on-international-tourism>, Accessed: March 2021.

In May 2020, UNWTO published three scenarios for 2021-2024, indicating declines of international tourist arrivals, based on the gradual opening of national borders and lifting of travel restrictions on different dates. In the outlook beyond 2020, international arrivals are expected to rebound in 2021, based on the assumption of a gradual reversal of the pandemic, the roll out of a Covid-19 vaccine, significant improvement in traveller confidence and major lifting of travel restrictions by the middle of the year. The expected rebound is also a consequence of the large pent-up demand after months of closed borders and travel bans. The extended scenarios presented in the paper are in terms of yearly totals, not growth. The rebound is expected to continue in 2022 as travel conditions normalize and the pandemic is contained globally. However, international tourism could still take 2 to 4 years to return to 2019 levels. The recovery times for each scenario are summarized below:

- *Scenario 1:* recovery in 2½ years (mid-2023);
- *Scenario 2:* recovery in 3 years (end of 2023);
- *Scenario 3:* recovery in 4 years (end of 2024).

The paper is organized as follows. After Introduction, in which the development of tourism from the perspective of Covid-19 crisis is presented, Section 2 is devoted to the Literature review in favor of sustainable tourism. Section 3 explains the Methodology of the research and data specification. The Section 4 deals with the research results and discussion. Last Section concludes the paper with a number of implications derived from the findings. The paper concludes with policy recommendations for governments to avert the worst effects, to facilitate recovery in this field, and to ensure sustainable

tourism in the context of environmental economics. The special contribution of the paper is reflected in the fact that it tries to answer the question how environmental policies can be effectively designed to support sustainable tourism development.

## 2. Literature Review

The increasingly pronounced dynamics of the changes imposed the need to consider the conditions for sustainable tourism development in the context of environmental economics and cyclical periods of crisis and prosperity. International trends of sustainable development, but also the need for adequate crisis management have spawned an alternative form of tourism. A new approach was sought, different from the existing major development rules or management styles, due to the negative impact of tourism on the environment. In this regard, tourism, more than any other industry, depends on the quality of natural and social resources. Numerous researches point to the increasingly pronounced demands of the global tourist demand for better attractive factors of supply, ie “untouched natural resources”. This is precisely the reason why the development of “responsible tourism” is increasingly emphasized, as opposed to the irresponsible concept of tourism development, the main and often the only goal of which is to achieve as much profit as possible in the shortest possible time. Taking into account all mentioned, the SWOT is given in Table 2 in order to point out the pandemic conditions for tourism development.

TABLE 2: SWOT analysis of the pandemic conditions on tourism industry

STRENGTHS	WEAKNESSES	
<p><i>Proven resilience of tourism in past crises; Domestic tourism can be a buffer; Adaptation capacity: safety and hygiene protocols, trips closer to home, value for money, responsible consumer behavior; Government support to the sector.</i></p>	<p><i>Segments potentially affected are also high spenders: international, long haul, business travel and events; Major disruption in airline industry with airline failures and concentration; Lack of references in previous downturns; Perception of travel as a risk Low levels of demand when restarting tourism due to social distancing.</i></p>	Internal factors
OPPORTUNITIES	THREATS	
<p><i>Re-think business model; Innovation and digitalization; Sustainability and sustainable-oriented segments (rural, nature); Progress in adaptation plans in destinations.</i></p>	<p><i>Economic environment: world recession, rising unemployment and jobs at risk, closure of business mainly SMEs, disposable income, uncertainty weighing on consumer and business confidence; Uncertain length of pandemic (including resurgence) and vaccine unavailability; Extent of lockdowns and travel restrictions.</i></p>	External factors
Positive	Negative	

Source: UNWTO, 2020. Available at: <https://www.unwto.org/impact-assessment-of-the-covid-19-outbreak-on-international-tourism>, Accessed: March 2021.

Numerous international organizations and associations have proposed principles and guidelines for sustainable tourism development. The greatest progress in the development of sustainable tourism was achieved with the adoption of Agenda 21

in 1996. Agenda 21 covers the goals and principles related to tourism. It helps to understand all the tasks and challenges in the development of modern tourism. In order to fully realize the concept of sustainable tourism, it is necessary to form sustainability indicators for tracking the achieved results in this field. Agenda 2030 is the last in a series of documents that seeks to position tourism among the priority policies of the European Union, emphasizing its impact on regional, national and international sustainable development. According to Agenda 2030, tourism is recognized as a key pillar for global sustainable development.

The World Tourism Organization defines sustainable tourism as tourism that provides tourism opportunities for future generations, as well as tourism that meets the needs of current tourists and local communities. In other words, sustainable tourism means, not only, tourism that maximizes benefits for local communities and minimizes costs, but also tourism which ensures the preservation of the cultural and natural environment of tourist destinations and the economic sustainability of the tourism industry [3]. In a nutshell, tourism that is able to meet the needs of local communities, the natural environment and the tourism industry is sustainable tourism. Butler defined sustainable tourism as tourism that develops and maintains in such way that remains sustainable for an indefinite period, and does not degrade or change the environment in which the successful development and well-being of other activities and processes are not disputed [4].

There are numerous definitions of sustainable tourism in the relevant literature. Sustainable tourism is any type of tourism that contributes to the long-term protection and preservation of natural, cultural and social resources, as well as the economic development and well-being of individuals living, working or residing in a particular area [5]. So that, sustainable tourism should make optimal use of environmental resource, respect the socio-cultural authenticity of the host communities and ensure sustainable, long-term economic performance [6].

Despite a number of definitions and different views of a large number of authors, the key elements of sustainable tourism development are: avoiding uncontrolled environmental degradation and loss of local identity, improving the quality of life and ensuring equality between generations (intragenerational equality) and providing the same opportunities for development and future generations (intergenerational equality) [7].

Starting from a large number of different interpretations of the concept of sustainable tourism and its operation and the importance of future development, there is a need to present the goals it aims at. Sustainable tourism implies a comprehensive and complex development of tourism that ensures the simultaneous achievement of heterogeneous goals, so that neither has to become dominant over the others, and these are making economic profit; preserving the social integrity of local communities; affirmation of the cultural identity of receptive areas; environmental protection and optimal satisfaction of tourist needs [8].

In the 21st century, according to WTO experts, the two main goals that tourism should achieve are to increase employment and to protect the environment of its natural and cultural values, among which there should be a high level of harmonization and mutual

coordination [9]. It follows that environmental protection contributes to job creation, increasing living standards and people's subjective satisfaction.

The creation of the 2030 Agenda envisages 17 sustainable development goals for the future period in order to achieve development in accordance with the principles of sustainability. Tourism is especially mentioned within the 8, 12 and 14 goals of sustainable development, and directly or indirectly contributes to the achievement of all other goals much more than any other activity [10]. Promoting sustainable, inclusive and economic growth with full and productive employment and decent work for all, as a goal of sustainable development of tourism, is recognized as a driving force of global economic growth, due to it currently provides 1 out of 11 jobs worldwide with great employment opportunities for women and youth. This goal recognizes the contribution of tourism to the creation of new jobs and that by 2030 a policy should be devised and implemented to promote sustainable tourism that creates new jobs and promotes local culture and products. It is also one of the four sectors with the highest export rate in the world. Objective 12, which refers to ensuring sustainable production and consumption, should be adopted by the tourism sector at an accelerating pace towards sustainability. In order to achieve this as set out in Objective 12b, it is necessary to develop and implement tools to monitor the impact on sustainable development through sustainable tourism that creates jobs, promotes local culture and products. According to the 14th goal of the 2030 Agenda, the preservation and sustainable use of the oceans, seas and marine resources are highlighted. Coastal and maritime tourism, the largest segments of tourism, especially for small island developing countries, rely on healthy marine ecosystems. Tourism development must be part of integrated coastal zone management in order to preserve fragile marine ecosystems and serve as a means to promote the blue economy.

All goals of the 2030 Agenda are based on the principles of sustainable tourism development. The principle of protection is one of the necessary conditions for sustainable tourism development [11]. Such tendency can be seen as one of the ways to achieve the general goals of sustainable development. It is assumed that countries and regions that have higher percentage of protected areas, provided that the protection is real rather than declarative, are more likely to meet the standards for sustainable tourism development [12].

Sustainable tourism has a minimal impact on the environment and local culture, while helping to generate income, create new jobs and protect local ecosystems. So sustainable tourism is a responsible tourism that is friendly to natural and cultural heritage [13]. In the case of tourism, as well as some other industries, it has been shown that environmental protection cannot be isolated, due to it is an integral part of the development process.

The issue of environmental protection has emerged as one of the most important debates in all countries of the world. In particular, there has been increasing interest in tourism as a potential development that is economically beneficial and environmentally sustainable [14]. The overall sustainability of tourism is directly related to the issue of achieving a balance between the volume of tourism activities, on the one hand, and the capacity of natural and created resources, on the other hand [15]. The size of the

capacity of a tourist destination is crucial for the issue of environmental protection and sustainable development. The development of sustainable tourism depends on the relationship it has with the environment in which operates. These relations are two-way, namely: a) the impact of the environment on the development of sustainable tourism and b) the impact of tourism on the environment.

### 3. Research Methodology

The methodological basis of the paper consists of all available reports (2007-2019) of the World Economic Forum on the Travel and Tourism Competitiveness Index (TTCI), which will be used to examine the competitiveness of tourism depending on the state of environment in the countries of the European Union. The structure of the index consists of four sub-indices, 14 pillars and 90 individual components, arranged between different pillars. The focus of interest in this paper is the total value of TTCI, as well as the value of the Environmental Sustainability pillar, that will be used in further analysis. Pillar Environmental Sustainability shows the relationship between sustainability and competitiveness of travel and tourism, and especially the interdependence of tourism development and the quality of the natural environment. This pillar points out the exploitation of the natural environment in the country, as well as, the possibility of adoption and implementation environmental regulations.

The importance of the natural environment for providing the attractiveness of a destination cannot be accurately assessed, so policies and factors that improve environmental sustainability are an important competitive advantage in ensuring the future attractiveness of a country as a tourist destination. The low values of this pillar indicate excessive depletion of natural resources, which consequently causes a decrease in the competitiveness of the tourism sector. The number of components, which are an integral part of the pillar Environmental Sustainability, has increased over the years, so that the last report considered ten crucial components for the quality of the environment.

### 4. Research Results

During the research, a descriptive analysis of the position of the European Union countries on the world ranking list according to the achieved level of the total value of TTCI, as well as according to the achieved Environmental Sustainability, was performed. In general, all European Union countries are in the first half of the world list, according to the achieved level of TTCI values, and it should be noted that depending on the year of observation, the scope of covered countries was different, with a tendency to increase from 124 countries (2007) to 141 countries.

On the one hand, Austria held the leading position within the observed countries of the European Union until 2011. After that, the leading position was taken over by Germany until 2015. After 2015, Spain is at the top of the ranking list of all countries in the world. Four countries of the European Union (Spain, France, Germany and Italy) are in the top ten countries in the world according to the competitiveness of the travel and



tourism sector during 2019. The total value of TTCI for Spain has grown from year to year, and it was 5.4 in 2019, which is the highest value of the index in the world.

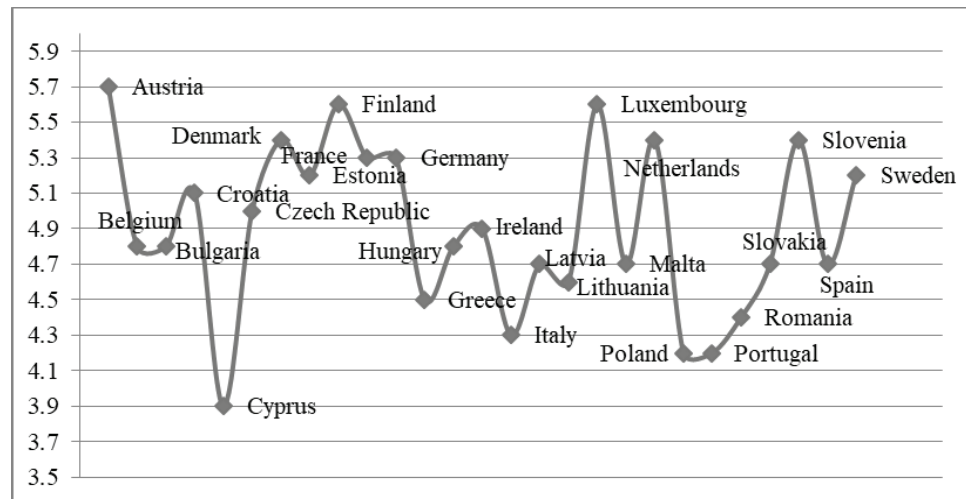
On the other hand, it can be noticed that Romania is at the bottom of the ranking list among the members of the European Union (from 76th to 56th position) during analyzed period. The improvement of Romania's ranking on the world ranking list was accompanied by an increase in the total value of TTCI. However, Romania, Lithuania, Latvia and Slovenia achieved the total value of TTCI 4 in 2019, which means that they share the last place on the ranking list among the observed group of countries. Average value of TTCI for European Union countries in the period 2007-2019. ranged from 4.87 to 4.41 with an oscillating trend over the years, with a significant decrease of 0.4 in 2015, when a slight increase in value started. The reason for this can be found in larger number of components, that affect the competitiveness of the travel and tourism sectors.

According to the value of the indicator Environmental Sustainability, the European Union countries are scattered on the world ranking list. During 2007, Environmental Sustainability had a value of 6.1, which ranked Austria, Germany and Denmark at the top of the world list. From 2008 to 2015, the leading position belongs to Sweden, which was also the leading country in the world in terms of the achieved level of environmental sustainability. Ireland had the best rank in 2015. Austria, with a score 5.7 for Environmental Sustainability, was on the first position among the analyzed countries in 2017, while it was the second country in the world in 2019 according to the value of Environmental Sustainability.

According to the achieved Environmental Sustainability, it is noticeable that eight European Union countries (Austria, Luxembourg, Finland, Netherlands, Denmark, Slovenia, Germany, France) are among the top ten world countries in 2019. Cyprus is at the bottom of the list (Graph 2). There is the same trend for the average TTCI values as for the average Environmental Sustainability values over the time for the selected countries. In particular, the oscillatory trend is present until 2015, when there is a significant negative peak, with a decrease in the average value of Environmental Sustainability from 5.23 to 4.67, which is followed by an increase. In this regard, as a consequence of a significant changes in values, it can be mentioned that the methodology for calculating the value of pillars has been changed, ie several other components that directly reflect the degradation of the environment as an indispensable part of tourism, have been added.

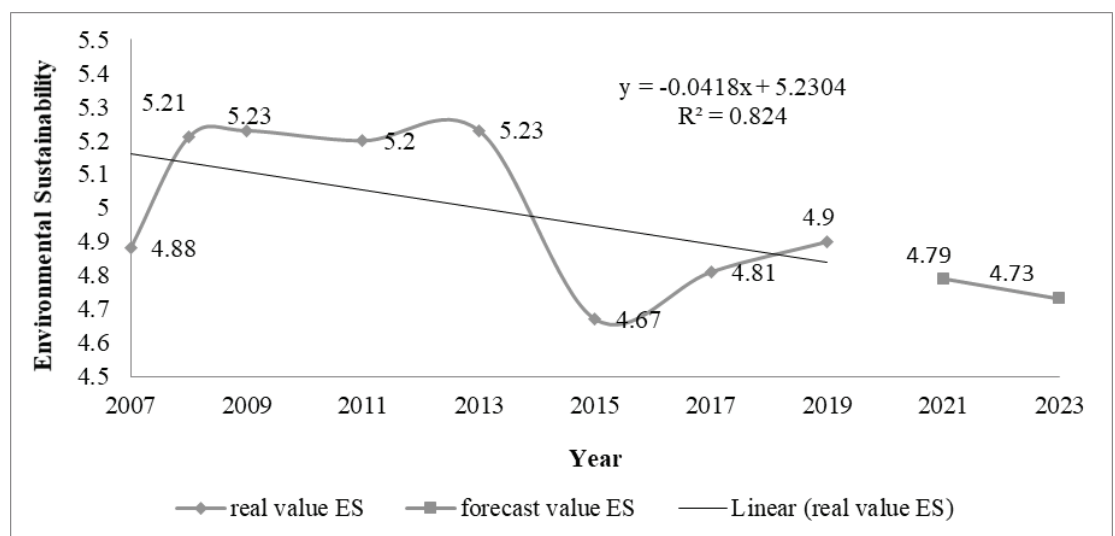
After a comparative descriptive analysis of the achieved level of environmental sustainability in the period from 2007 to 2019. for the European Union countries, the projection of future values for the next two periods (2021 and 2023) was performed. Based on the actual average values of the pillar Ecological sustainability for selected countries, a projection of future values is made. Graph 3 clearly shows that after the oscillatory trend with a significant negative peak of the real value in 2015, the trend of a slight decrease in the value of pillars continues. Estimated value of the Environmental Sustainability for 2021 is 4.79, and for 2023 is 4.73. Decrease in average value of pillar Environmental Sustainability indicates the depletion of natural resources, insufficient compliance with regulatory rules in this area, as well as the growing effect of numerous factors that directly affect environmental degradation.





**Figure 2:** Achieved the level of value Environmental Sustainability for the European Union member states in 2019 (Source: Autor's calculation)

In this regard, the competitiveness of the travel and tourism sector has been called into question, due to it is directly linked to the quality of the environment, which will be disrupted. Closely related to the development of the travel and tourism sector, is the principle of sustainability, which refers to intergenerational solidarity in terms of preserving available natural resources for future generations and human ecological support systems such as: clean air, unpolluted water and food. This is questionable if the projected values for environmental sustainability are achieved in the next two periods (2021 and 2023).



**Figure 3:** Projected values of Environmental Sustainability for 2021 and 2023 in the European Union (Source: Autor's calculation)

In order to obtain more precise results in examining the interdependence of the competitiveness of the travel and tourism sector and environmental sustainability, a correlation analysis was applied. In addition, all available data for the total value of TTCI and the value of Environmental Sustainability for all European Union countries Union

were taken. The results of the correlation analysis, which describes the strength and direction of the linear relationship between the two variables, are given in Table 3, which contains data on Pearson and Spearman correlation coefficients.

TABLE 3: Correlation analysis matrix for total TTCI value and Environmental Sustainability

TTCI/ES	2007	2008	2009	2011	2013	2015	2017	2019
Pearson Correlation	0.816	0.618	0.608	0.651	0.562	0.230	0.233	0.294
Sig.	0.000	0.001	0.001	0.000	0.002	0.025	0.024	0.014
Spearman Correlation	0.797	0.637	0.671	0.673	0.583	0.310	0.225	0.392
Sig.	0.000	0.000	0.000	0.000	0.001	0.016	0.026	0.043

Source: Autor's calculation

The observed time period is characterized by a different level of quantitative agreement in terms of the strength of the relationship between selected variables. During all years, there is a positive value of the correlation coefficient. The realized level of significance (Sig.) is less than 0.05, which indicates that the relationship between the observed variables is statistically significantly different from zero. The highest level of the Pearson correlation coefficient was achieved in 2007 (0.816) which reflect a very strong correlation between the total TTCI value and the value of the Environmental Sustainability. In the period from 2008 to 2013, there was a moderate to strong correlation (0.618-0.562) between the analyzed variables. The direct correlation of low intensity of these two variables characterizes the period after 2013, when the value of the coefficient changed with a tendency to decrease over the years, but slightly. Similar results are given by the Spearman coefficient, which values decrease until 2017, followed by a slight increase during 2019. The significance level of the Spearman coefficient is statistically significant for selected variables in the analyzed period.

Looking at the overall results, we can conclude that the positive correlation confirms the fact that the competitiveness of the travel and tourism sector can be the result of long-term, sustainable policy regulation. European Union countries that have high values of environmental sustainability also have a high level of competitiveness as a whole. Leading countries in terms of environmental sustainability have very strict environmental policies, which are related to the travel and tourism sector, but also to other sectors of the economy. Sustainability has traditionally been considered as a key element for tourism competitiveness [16]. The sustainability of the environment is especially emphasized as a key variable for the long-term competitiveness of tourist destinations or for improving the quality of life of the local population [17]. Recent research in this area shows that sustainability components have a significantly higher impact on tourism competitiveness compared to other variables [18].

In the second phase of the research, a cluster analysis was conducted. The European Union countries were grouped into homogeneous groups according to the achieved level of environmental sustainability in 2019 (Table 4). Three clusters have been differentiated, which include 27 countries. The average value of Environmental Sustainability for the entire group is 4.98. The first cluster consists of nine countries (Austria, Denmark, Finland, France, Germany, Ireland, Luxembourg, Netherlands, Sweden), and the average value of the key indicator is very high (5.51). These countries have good reputation and

strict environmental legislation that has been successfully implemented in the tourism sector. At the same time, sustainable tourism development, and low levels of pollution and damage to the environment, are their advantages that allow them to be highly competitive in terms of environmental quality.

TABLE 4: Grouping of European Union countries by clusters, according to the achieved environmental sustainability

Cluster	Frequency	Mean of Environmental Sustainability in 2019	Countries
1	9	5.51	Austria, Denmark, Finland, France, Germany, Ireland, Luxembourg, Netherlands, Sweden
2	11	4.95	Belgium, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Portugal, Slovakia, Slovenia, Spain
3	7	4.49	Bulgaria, Cyprus, Greece, Italy, Malta, Poland, Romania
Total	27	4.98	

Source: Autor's calculation

Cluster 2 is more numerous in relation to the first one, and it covers eleven countries whose average value of Environmental Sustainability is 4.95 in 2019. The countries in the second cluster are ranked lower globally according to this indicator, but also according to the overall TTCI index. The exception is Spain, which ranks first in terms of the total value of TTCI, and represents the leading country in terms of competitiveness of the travel and tourism sector, while in terms of environmental sustainability it shows different performance. The main reason for this results is great commitment to the environment through the ratification of most of the most important environmental agreements, as well as the strictness in the application of regulations in the field of environmental protection. This leads to low performance of the environmental indicators. In general, all countries in the second cluster (Belgium, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Portugal, Slovakia, Slovenia and Spain) should consider how to increase environmental performance in order to ensure sustainable growth in the travel and tourism sector.

The third cluster consists of seven countries, and their average value of Environmental Sustainability is 4.49. This indicates that the level of environmental protection is at an unsatisfactory level, and that it is not possible to talk about respecting the principle of sustainability in the development of tourism. More specifically, the competitiveness of this sector cannot be attributed to a healthy and protected natural environment. Italy, which is in this cluster, is among the leading countries in terms of the overall level of competitiveness of the travel and tourism sector, but improvements in environmental management are crucial to ensure the continued competitiveness of this sector in the future.

One-way ANOVA was applied to check the statistical significance of differences in average values of Environmental Sustainability between clusters. As the significance level is less than 0.05, it is concluded that there is homogeneity of variance for the selected variable in the European Union countries, and that there are statistically

TABLE 5: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.849	2	1.924	21.982	0
Within Groups	2.101	24	0.088		
Total	5.95	26			

Source: Autor's calculation by using IBM SPSS Statistics 26.0

significant differences in the average values of the variable Environmental Sustainability between clusters. At the same time, based on the value of F-statistic which is higher than the critical value, the cluster analysis is acceptable, and model is justified.

## 5. Conclusion

The research conducted is significant due to it considers the perspective development of sustainable tourism in the context of environmental economics and pandemic conditions. The obtained results can be useful to economic policy makers in this field, as well as researchers.

By applying the selected statistical analyzes, it can be seen that the level of competitiveness of the travel and tourism sector is closely correlated with the achieved level of environmental sustainability. Specifically, the existence of a highly positive quantitative correlation between the total value of TTCI and environmental sustainability, has been established. Cluster analysis shows that most European Union countries, which have a high value of the Travel and Tourism Competitiveness Index, take care about the environment protection. These countries are developing tourism in a sustainable way, considering all components of environmental sustainability, while considering the impact of regulation for the protection of natural and cultural assets.

There is a growing awareness among the public and regulatory bodies about the intensification of "greener" travel that focuses on balancing the demands of tourism and the need to preserve environmental stability. Policy makers, especially those where tourism destinations are still developing, should give priority to long-term sustainability in order to protect natural and cultural beauties, with a clear focus on greening the tourism offer that contributes to creating advantages over competing destinations. Besides that, given that the price represents one of the main determinants of tourism demand, policy makers in Europe should pay more attention to price factors in the following period in order to improve the price competitiveness of countries, as one of the important strategies for tourism development [19].

The two main challenges to environmental economics are its transnational nature and its impact on various industries, sectors and parts of a society. In addition, environmental economics studies the impact of environmental policies and devises solutions to problems resulting from them. In this regard, the approach can either be prescriptive or incentive-based. According to OECD estimates (2020), and bearing in mind the Covid-19 pandemic crisis period, the key policy priorities during this period of transition to sustainable tourism include:

- Sustain domestic tourism to protect jobs and support business survival;
- Support the viability of tourism businesses, especially SMEs, and help firms to implement health and safety measures;
- Support the safe and progressive opening of international tourism through risk-based measures;
- Provide information and communication to limit uncertainty;
- Maintain capacity in the sector and address gaps (e.g. destination management organizations).

To sum up, flexible policy solutions are needed to enable the tourism economy. At the same time it is important to take steps to learn from the Covid-19 pandemic crisis, which has revealed gaps in industry preparedness and response capacity. Looking ahead, the measures put in place today will shape tourism of tomorrow. Governments need to consider the longer term implications of the Covid-19 pandemic crisis, while respecting digital trends, supporting the environmental protection, and promoting the structural transformation needed to build stronger, more sustainable and resilient tourism economy. This paper can serve as a basis for further research aimed at achieving long-term sustainability in the tourism. Finally, the Covid-19 pandemic crisis is an opportunity to rethink perspective development tourism for the future, and the obtain results can be useful for academic community and policy makers.

## Acknowledgement

“This research was financially supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Contracts No. 451-03-9/2021-14/200109 and 451-03-9/2021-14)”

## References

- [1] Bulin D, Tenie IP. Preliminary assessment of the COVID-19 pandemic impact on the tourism industry. *Global Economic Observer*. 2020;8(1):41-46.
- [2] Rebuilding tourism for the future: COVID-19 policy response and recovery. OECD policy responses to Coronavirus (COVID-19). Paris: Organisation for Economic Co-operation and Development Publishing; 2020. <https://doi.org/10.1787/bced9859-en>
- [3] Guide for Local Authorities on development sustainable tourism. World Trade Organization; 1998.
- [4] Butler RW. Tourism and sustainable development: Monitoring, planning, management. Nelson JG, Butler RW, Wall G, editors. Waterloo: University of Waterloo; 1993. *Tourism: An evolutionary approach*.
- [5] Đekić S, Jovanović S. Konkurentnost i održivi razvoj privrede Republike Srbije. Krstić B, editor. Niš: Ekonomski fakultet u Nišu; 2016. Održivi turizam kao strategijski cilj razvoja turizma u zemljama jugoistočne Evrope; p. 272-288.
- [6] United Nations Environment Programme, World Tourism Organization. Making tourism more sustainable - A guide for policy makers. United Nations Environment Programme, Division of Technology, Industry and Economics; 2005.
- [7] Creaco S, Querini G. The role of tourism in sustainable economic development. Paper presented at: 43rd Congress of the European Regional Science Association; 2003 Aug 27-30; Jyväskylä, Finland.
- [8] Jovičić D. Turizam i životna sredina. Beograd: Ton Plus; 2010.
- [9] Moisey RN, Mccool S. Tourism, recreation and sustainability: Linking culture and the environment. CABI; 2008. Sustainable tourism in the 21st century: Lessons from the past, challenges to address, p. 283-291. doi: 10.1079/9780851995052.0343

- [10] World Tourism Organization, *Tourism for Development – Volume II: Good Practices*. UNWTO.Madrid; 2018 DOI: <https://doi.org/10.18111/9789284419746>.
- [11] Jovičić D. *Turizam i životna sredina – Konceptija održivog razvoja*. Beograd: Zadužbina Andrejević; 2000.
- [12] Mowforth M, Munt I. *Tourism and sustainability: Development and new tourism in the Third World*. London: Routledge; 2003.
- [13] Stefanović V, Azemović N. Geneza teorijske misli o razvoju turizma. *Teme*. 2011;35(1):69-84.
- [14] Duffy R. *A trip too far: Ecotourism, politics and exploitation*. London: Earthscan Publications; 2002.
- [15] Popesku J. *Menadžment turističke destinacije*. Beograd: Univerzitet Singidunum; 2016.
- [16] Pulido-Fernández JI, Andrades-Caldito L, Sánchez-Rivero M. Is sustainable tourism an obstacle to the economic performance of the tourism industry? Evidence from an international empirical study. *Journal of Sustainable Tourism*. 2015;23(1):47-64.
- [17] Farsari Y, Butler R, Prastacos P. Sustainable tourism policy for Mediterranean destinations: Issues and interrelationships. *International Journal of Tourism Policy*. 2007;1(1):58-78.
- [18] Cucculelli M, Goffi G. Does sustainability enhance tourism destination competitiveness? Evidence from Italian destinations of excellence. *Journal of Cleaner Production*. 2016;111:370-382.
- [19] Radukić S, Kostić Z. 4th international thematic monograph-modern management tools and economy of tourism sector in present era. Bevanđ V, Štetić S, editors. Ohrid, North Macedonia. Belgrade, Serbia: Association of Economists and Managers of the Balkans in cooperation with the Faculty of Tourism and Hospitality; 2019. What is the impact of price factors on sustainable tourism competitiveness?; p. 169-182. DOI: <https://doi.org/10.31410/tmt.2019.169>
- [20] Impact assessment of the Covid-19 outbreak on international tourism. World Tourism Organization; 2020 [cited 2021 Mar]. Available from: <https://www.unwto.org/impact-assessment-of-the-covid-19-outbreak-on-international-tourism>
- [21] World Economic Forum. *The travel and tourism competitiveness report*. Geneva, Switzerland: World Economic Forum; 2019.