SVEUČILIŠTE U RIJECI, EKONOMSKI FAKULTET
DOKTORSKI STUDIJ EKONOMIJE I POSLOVNE EKONOMIJE
I. Filipovića 4, 51 000 Rijeka

Referada za poslijediplomske studije i doktorate

U Rijeci, dana 27.05.2024. godine.

ZAHTJEV ZA OCJENU DOKTORSKOG RADA

Poštovani članovi Fakultetskog vijeća i Povjerenstva za poslijediplomske studije i doktorate,

sukladno članku 35. Pravilnika o doktorskom studiju Ekonomija i poslovna ekonomija (pročišćeni tekst), Ekonomskog fakulteta u Rijeci od 12. veljače 2024. godine podnosim svoj zahtjev za ocjenu doktorskog rada s naslovom ODREDNICE ODRŽIVOSTI RAZVOJA TURIZMA U FUNKCIJI KREIRANJA DODANE VRIJEDNOSTI – PRIMJER ZEMALJA ČLANICA EU kojem prilažem:

1. Indeks
2. Odluka FV o prihvaćanju prijave teme i imenovanje mentora
3. Odluku FV o prihvaćanju prikaza rezultata istraživanja
4. Rješenje o priznavanju ECTS bodova sukladno čl. 27 i 28. Pravilnika o doktorskom studiju
5. Pismenu suglasnost mentora/komentora da rad zadovoljava kriterije doktorskog rada (ispunjava mentor/komentor)
6. 4 spiralno uvezena primjerka doktorskog rada
7. životopis na standardiziranom obrascu u 2 primjerka (Europass)
8. kratak sažetak doktorskog rada (300-500 riječi) te pet ključnih riječi na engleskom i hrvatskom jeziku
9. prošireni sažetak koji se piše na engleskom jeziku ukoliko je rad pisan na hrvatskom odnosno na hrvatskom jeziku ukoliko je rad pisan na engleskom jeziku; ne smije biti kraći od 5000 riječi (sadrži ciljeve, postupke, rezultate i zaključke istraživanja zajedno s tablicama/grafikonima te popisom literature)
10. naslov doktorskog rada na hrvatskom i engleskom jeziku (službena lektura)
11. izvješće o provedenoj provjeri izvornosti doktorske disertacije(TURNITIN obrazac – ispunjava ga mentor/komentor)
12. zapis doktorske disertacije u PDF formatu (jedna datoteka) – poslati mailom

U nadi za vašim pozitivnim očitovanjem srdačno vas pozdravljam,

STUDENT:

Ani Trstenjak, univ. spec.oec.

MENTOR SA ZAMOLBOM SUGLASAN :

prof.dr.sc. Saša Žiković

KOMENTOR SA ZAMOLBOM SUGLASAN:

izv.prof.dr.sc. Ivana Tomas Žiković

Ekonomski fakultet u Rijeci
Ivana Filipovića 4
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Rijeka, 27.05.2024.

Ekonomski fakultet u Rijeci
Povjerenstvo za PS i doktorate

Predmet: PISMENA SUGLASNOST ZA PREDAJU DOKTORSKOG RADA

Dajemo suglasnost **Ani Trstenjak,** studentici doktorskog studija Ekonomije i poslovne ekonomije za predaju u postupak ocjenjivanja doktorskog rada pod naslovom **„ODREDNICE ODRŽIVOSTI RAZVOJA TURIZMA U FUNKCIJI KREIRANJA DODANE VRIJEDNOSTI – PRIMJER ZEMALJA ČLANICA EU".**

Mentor:
prof.dr.sc. Saša Žiković

Komentor:
izv.prof.dr.sc. Ivana Tomas Žiković
Ivana Tomas Žiković

SVEUČILIŠTE U RIJECI
EKONOMSKI FAKULTET

uniri

Izvješće o provedenoj provjeri izvornosti studentskog rada

Opći podatci o studentu:

Sastavnica	Ekonomski fakultet u Rijeci - EFRI
Studij (zaokružiti ili podebljati)	Preddiplomski / Diplomski / **Poslijediplomski**
Vrsta studentskog rada (zaokružiti ili podebljati)	Završni / Diplomski / Završni specijalistički / **Doktorski**
Ime i prezime studenta	**Ani Trstenjak**
JMBAG	**222/19**

Podaci o radu studenta

Identifikacijski br. podneska	2296374736

Podudarnost studentskog rada:

PODUDARNOST

Ukupno	19% (podudarnost pada na 9% ukoliko se isključe izvori ispod 1%)
Izvori s interneta	17%
Publikacije	6%
Studentski radovi	8%

Izjava mentora o izvornosti studentskog rada

Mišljenje mentora

Datum izdavanja mišljenja	27.05.2024.
Rad zadovoljava uvjete izvornosti	**DA** / NE
Obrazloženje mentora (po potrebi dodati zasebno)	

Datum

27.05.2024.

Potpis mentora

Potpis komentora

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EKONOMSKI FAKULTET U RIJECI
Ivana Filipovića 4
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Naslov teme doktorskog rada

ODREDNICE ODRŽIVOSTI RAZVOJA TURIZMA U FUNKCIJI KREIRANJA DODANE VRIJEDNOSTI – PRIMJER ZEMALJA ČLANICA EU

(na hrvatskom jeziku)

DETERMINANTS OF THE SUSTAINABILITY OF TOURISM DEVELOPMENT AIMED AT CREATING ADDED VALUE – THE CASE OF EU MEMBER COUNTRIES

(na engleskom jeziku)

Potpis doktoranda

Ani Trstenjak

SAŽETAK

Turizam je jedna od najvećih i najbrže rastućih industrija u svijetu. Dugoročno gledano, osnovni pokazatelji i trendovi u turizmu, do 2023. godine, jaki su i nastavljaju pokazivati stabilan uzlazni trend. Iako su otvaranje radnih mjesta i poticanje gospodarskog rasta dvije najvažnije uloge turizma, zaštita okoliša i održivo poslovanje predstavljaju veliki izazov na globalnoj razini. Pregledom znanstvene literature i dosadašnjih istraživanja uočen je veliki jaz u definiranju pokazatelja održivosti u analizi turizma kao i manjkavost empirijskih istraživanja na razini zemalja članica Europske unije (EU). Navedeno predstavlja glavni razlog odabira upravo ove teme i problematike jer se kroz holistički pristup nastoji obuhvatiti što veći broj indikatora održivosti relevantnih za predmetnu analizu.

Istraživanje ima za cilj pružiti bibliometrijsku analizu relevantne literature uz identifikaciju statusa istraživanja primarno ekoloških aspekata održivog razvoja turizma te odrediti ključna područja, časopise, znanstvene radove i autore u predmetnom razdoblju. U radu se nadalje istražuju razlike u relativnim efikasnostima proizvodnih inputa između dvije promatrane skupine zemalja, tehnički efikasnih i tehnički neefikasnih zemalja članica EU gdje je podjela zemalja izvršena nakon provedene DEA analize podataka. Rezultati DEA analize predstavljaju svojevrstan input u panel analizu podatka. Rezultati DEA analize pokazuju kako je 7 od 27 država članica tehnički efikasno u korištenju proizvodnih inputa: investicija po zaposlenom, finalne potrošnje energije te troškova socijalnog osiguranja. Austrija i Njemačka su postigle tehničku efikasnost kroz sve godine, dok su Danska, Italija, Luksemburg, Nizozemska i Španjolska postigle tehničku efikasnost u većini promatranih godina.

Nadalje, identificira se utjecaj varijabli održivosti na kretanje održive dodane vrijednosti (SVA) u turizmu između 27 zemalja članica EU te se primarno determinira utjecaj ekonomskih i okolišnih (energetskih) pokazatelja na kretanje iste u razdoblju 2013.-2019., primjenom dinamičkog panel procjenitelja (GMM). Dobiveni rezultati potvrđuju prethodna istraživanja gdje je vidljiv značajan utjecaj ekonomskih i okolišnih varijabli na kretanje SVA, posebice obnovljivih izvora energije (OIE) te

emisija stakleničkih plinova. Turistička poduzeća mogu smanjiti svoj okolišni utjecaj kroz povećanje efikasnosti korištenja resursa prvenstveno kroz smanjenje emisija stakleničkih plinova i povećanu primjenu OIE uz tranziciju proizvodnog procesa od primarnih resursa (kapitala i rada) na inpute usmjerene na očuvanje okoliša i posljedično povećanje njihove efikasnosti.

Ovaj rad pruža korisne informacije u promicanju teorijskih i praktičnih istraživanja u ovom području usvajanjem sustavnog i vizualnog pregleda studija relevantnih za razvoj održivog turizma. Navedeni zaključci predstavljaju osnovu za daljnja istraživanja, dok se očekivani znanstveni doprinos rada najviše očituje u istraživačkim hipotezama rada gdje dobiveni rezultati istraživanja predstavljaju vrijedne informacije za kreatore politike u daljnjem ostvarivanju strateških ciljeva gdje uloga OIE u turizmu postaje sve značajnija. Zemlje s većim udjelom OIE u ukupnim izvorima energije imaju veću dodanu vrijednost industrije, dok varijabla OIE ima značajan i pozitivan utjecaj na stvaranje SVA. Zemlje sa smanjenom potrebom za konvencionalnim izvorima energije mogu stvoriti nove mogućnosti zapošljavanja vezane uz korištenje OIE, uz učinak otvaranja novih radnih mjesta što posljedično vodi k većoj produktivnosti i većem SVA.

Ključne riječi: održivi razvoj turizma, odrednice održivosti, dodana vrijednost, obnovljivi izvori energije, EU zemlje članice, bibliometrijska analiza, DEA analiza, panel analiza.

ABSTRACT

Tourism is one of the largest and fastest growing industries in the world. In the long term, the basic indicators and trends in the industry, until 2023, are strong and continue to show a stable upward trend. Although the creation of jobs and the stimulation of economic growth are two of the most important roles of tourism, maintaining sustainability is a major problem at the global level. A review of the previous literature and previous research revealed a large gap in the definition of sustainability indicators in the sectoral analysis, as well as a lack of empirical research at the level of European Union (EU) member countries. The above is the main reason for choosing this particular topic and issue, because through a holistic approach, it makes an effort to include as many sustainability indicators as possible.

The purpose of the study is to provide a bibliometric analysis of the pertinent literature with the identification of the current state of research on mainly ecological aspects of sustainable tourism development and to identify the important fields, journals, scientific works, and authors during the time period. The division of countries was made after the DEA data analysis, and the study further explores the differences in the relative efficiencies of production inputs between the two observed groups of countries, technically efficient and technically inefficient EU member states. A type of information for the panel data analysis is provided by the outcomes of the DEA analysis. According to the findings of the DEA study, 7 out of the 27 member states use production inputs technically efficiently in terms of investment per employee, final energy consumption, and social security costs. Denmark, Italy, Luxembourg, the Netherlands, and Spain attained technical efficiency in the majority of the observed years, whereas Austria and Germany did so in every year.

Additionally, sustainable added value (SVA) in the observed tourism sector among the 27 EU member states is primarily influenced by economic and environmental (energy) indicators. Analysis of panel data for the years 2013. to 2019. is done by using dynamic panel estimators (GMM – Generalised Method of Moments). The obtained findings support earlier studies that showed a significant impact of economic and environmental factors on SVA, particularly renewable energy sources (RES) and

greenhouse gas emissions. With the shift of the production process from primary resources (capital and labor) to resource-oriented inputs and subsequently increasing their efficiency, tourism businesses can lessen their environmental impact by improving resource use efficiency, primarily through the reduction of greenhouse gas emissions and the increased use of RES.

By using a systematic and visual review of studies pertinent to the development of sustainable tourism, this paper adopts a review approach that offers useful information for advancing theoretical and practical research in this area. The work's expected scientific contribution is most clearly seen in the carefully chosen research hypotheses, and the findings provide important information for policymakers as they work to further accomplish their strategic objectives, where the role of RES in tourism is becoming more and more important. Countries with a higher share of RES in total energy sources have a higher added value of the industry, while the RES variable has a significant and positive impact on the creation of SVA. Countries with a reduced need for conventional energy sources can create new employment opportunities related to the use of RES, with the effect of creating new jobs, which consequently leads to higher productivity and higher SVA.

Keywords: sustainable development of tourism, determinants of sustainability, added value, renewable energy sources, EU member countries, bibliometric analysis, DEA analysis, panel analysis

LONG ABSTRACT

Tourism is one of the largest and fastest growing industries in the world. In the long term, the basic indicators and trends in the industry, until 2023, are strong and continue to show a stable upward trend. Although the creation of jobs and the stimulation of economic growth are two of the most important roles of tourism, maintaining sustainability is a major problem at the global level.

The idea of sustainable development is founded on the idea of socioeconomic growth within the bounds of the environment and ecology, as well as the idea of requirements in the form of resource redistribution to ensure the essential standard of living for everyone. The idea is the accomplishment of a balance between the three main tenets of sustainability. Maintaining the natural, social, and human capital essential to earn an income and a high standard of living requires economic, environmental, and social sustainability. While the term "sustainability" itself encompasses a variety of approaches and indicator systems for monitoring them, full sustainable development implies a balance of all sustainability factors. Indicators are actually benchmarks that must be met and implemented in order to effectively implement the idea of sustainable development. The idea of sustainable development is prevalent both globally and locally, and it has been around for more than 30 years.

Due to its rapid expansion and development, tourism places a tremendous amount of strain on the environment and its sustainability, which causes environment to be destroyed. The main idea is to construct a theory of sustainable tourist development that will guarantee the social, economic, and environmental harmony of continued tourism development. The UN Commission on Environment and Development's 1987 report, Our Common Future, used the term "sustainable development" for the first time. Every sector of society searches for a long-term answer to its problems. Sustainability places a strong emphasis on moral standards and values, which Implement the economic, environmental, and social repercussions of acts to steer behavior in a harmonious and responsible path. The idea of sustainability has been applied to various industries, including tourism, and as a result, it has emerged as a

strategic concern for numerous sectors of the economy. Tourism growth can harm economic, environmental, and social development if it is not properly planned and managed. A holistic viewpoint that completely takes into account the future economic, environmental, and social consequences is required to establish a sustainable type of tourism. Each industry is tasked with determining the best method for its production, and numerous scholars have focused on the future development of tourism in the context of sustainability.

Sustainability-based economic and social growth has many benefits both now and in the future. There is a chance that humanity will run out of fossil fuels, or that many animal species will go extinct, or that the atmosphere will be permanently damaged if harmful processes continue unabated. If more sustainable decisions are not made, it will not be possible to protect ecosystems. The concept of sustainable tourism is essential to the industry because, even though tourism can increase local economies and open doors for those working in the field, it can also have disastrous side effects like resource overuse, extinction of animal and plant species, and harm to local ways of life. increasing the good and decreasing the bad influences, the objectives of sustainable tourism are to minimize adverse effects on the location.

Tourism is one of the most developed and dynamic industries in the world. Planning and promoting tourism responsibly implies taking into account the needs of the social, economic, and ecological aspects of society. This improves customer happiness while also having a good impact on the environment and society. Environmental issues at popular tourist destinations gave rise to the idea of sustainable tourism, which is a byproduct of sustainable development. The main objectives of sustainable development included safeguarding the environment from the harmful external effects of development, as well as assuring environmental preservation, community involvement, and other advantages.

A review of the previous literature and previous research revealed a large gap in the definition of sustainability indicators in the sectoral analysis, as well as a lack of empirical research at the level of European Union (EU) member states. The above is the main reason for choosing this particular topic and issue, because through a holistic approach, it makes an effort to include as many sustainability indicators as

are pertinent to the study. The purpose of the study is to provide a bibliometric analysis of the pertinent literature with the identification of the current state of research on mainly ecological aspects of sustainable tourism development and to identify the important fields, journals, scientific works, and authors during the time period.

The European Commission claims that in addition to environmental concerns, increasing the local community's welfare, minimizing seasonality in demand, making tourism accessible to everyone, and raising the standard of tourism firms are the primary difficulties for sustainable tourism. The overall analysis of tourist efficiency could include a wide range of potential variables. In many scientific domains, efficiency and sources of inefficiency are now measured and compared using the methodology of data analysis DEA. A new viewpoint on the issue of ecological security and tourism sustainability is provided by the current dynamic of economic development of the industry. Studies on sustainable tourism need to be advanced to a more scientific level in order to take an interdisciplinary approach, therefore it is crucial to improve present policies and measures from a theoretical perspective to their practical viability.

Energy efficiency must be promoted by technology for the development of energy efficiency and the penetration of RES through the use of targeted economic instruments, keeping in mind the tenets of sustainable development. Utilizing RES in the tourism industry can lessen reliance on imported fuels, increase the number of consumers who care about the environment, and hence have a less detrimental effect on the environment. A reduction in energy consumption and the creation of new job opportunities related to the usage of RES are potential outcomes of such a strategy. Integrated energy policy and strategy execution can increase the amount of energy by effectively developing and utilizing sustainable tourism models and increasing the use of RES. When employing RES to change energy sources in order to achieve the principle of sustainable development, there is a connection between sustainable development, responsible tourism, and supply excellence. The modern concept of sustainable development in tourism must take into account ecological, energy, sociocultural, and economic aspects of sustainability.

The connection between sustainability and tourism is especially noteworthy given the significance of tourism to the global economy. There is an expansion in the field of sustainable tourism research published in the top four journals, nearly half of which happened in the last two years of analysis. The majority of the study on sustainable tourism has been published as case studies, empirical research, and critical accounts. Themes in research on sustainable tourism haven't changed despite the theoretical and methodological frameworks that have evolved over time. Whereas the majority of studies in this field are carried out in Australia, the United States, and England, they outweighed other studies in the assessed works.

By using a systematic and visual review of studies pertinent to the development of sustainable tourism, this paper adopts a review approach that offers useful information for advancing theoretical and practical research in this area. The work's expected scientific contribution is most clearly seen in the carefully chosen research hypotheses, and the findings provide important information for policymakers as they work to further accomplish their strategic objectives, where the role of RES in tourism is becoming more and more important. The conclusions made here serve as the foundation for further study in this area.

According to a survey of the top journals, authors, institutions, and keywords, the body of knowledge on sustainability issues in tourism is fast growing, and sustainability is increasingly becoming a strategic approach for enterprises and tourist destinations. The literature on tourist management and marketing in the direction of sustainable tourism is examined in this study using a bibliometric analysis method based on the Web of Science (WoS) database. One of the most significant bibliographic databases is the multidisciplinary Scopus database, which belongs to Elsevier and comprises over 69 million records. The Scopus database was used as a source of empirical data for the purposes of this work in order to ensure that the literature included in the analysis is as wide and high-quality as possible.

The VOSviewer application was used to create and visualize bibliometric data, and examination of the data can be based on citation, bibliographic merging, co-citation, or co-authorship, with these networks include journals, researchers, or individual publications. Additionally, networks of pertinent words and phrases drawn from a

corpus of scientific literature can be created and displayed using VOSviewer. In order to do descriptive data analysis for this work, the authors, citations, geographic distribution, and frequency of key phrases were examined using the bibliometric capabilities provided by the VOSviewer software.

The keywords employed in the research and bibliographic material search were added value, energy efficiency, determinants of sustainability, energy indicators, and renewable energy sources. There were 337 scientific papers that address search criteria that were published between 1996 and 2021. Advances in development, tourism, and energy efficiency have the best overall performance and high count.

The results show that 222 scientific articles make up the majority of published works (59.5%), followed by 85 anthologies (22.8%), 36 book chapters (9.7%), and 12 reviews (3.2%). A number of authors have contributed to the development of the field of study on sustainable tourism. The database discovered 15 authors who published at least three publications on the sustainability of tourism development between 1996 and 2022. The number of articles published, the number of citations, and the overall strength of the link were taken into account in order to determine the authors who were most relevant. The authors with the most published works on the subject of sustainable development are Kovai, M. (12) and Zhang, J. (6), while Becken, S. (6) has the most citations.

In terms of the total number of published works, China and Croatia are in the lead, followed by Italy and Spain, according to a further study of the works by country of publication. The fact that the USA dominates in terms of citations is really intriguing. It was demonstrated that there is a global interest in sustainable tourism using the authors' home nations, because almost half of the countries published at least 10 papers on the topic, and authors from 4 countries (China, Croatia, Italy and Spain) published more than 20 papers on the topic of sustainable tourism development. The fact that authors from different countries are interested in the issue of sustainability of tourism implies that the issue of sustainable development is a worldwide problem.

The analysis of published works by fields of study reveals that works from environmental sciences (23.2%) and social sciences (16.6%) are the most prevalent,

followed by engineering (11.8%), energy (10.6%), and management (9.2%). The share of other fields is significantly lower than that of the most prevalent fields of study. *The International Multidisciplinary Scientific Geoconference Surveying Geology and Mining Ecology Management (SGEM), Acta Ecologica Sinica*, and *Sustainability* are the top sources for published articles (over 10 papers), according to the source of publishing. The most successful publisher, according to CiteScore, is Elsevier from the Netherlands.

Further analysis presents an overview of empirical research on the factors that affect the mobility of the added value of tourism and the sustainability of tourism development. The focus of additional analysis is an overview of the most pertinent research on the determinants of tourism sustainability using Data Envelopment Analysis (DEA) and an overview of the most pertinent research using panel data analysis.

The predicted rise in labor productivity from fixed capital (FCE) will make tourism more effective and productive. A bigger quantity of goods and services are provided at a faster rate when there is a higher ratio of available equipment to available employees. It is ideal to have a high revenue per employee (TPE) ratio since a greater ratio denotes higher production, which in turn generates larger profits. Additionally, a higher ratio shows that resources (human capital) are being utilised effectively. Because higher investment boosts production capacity and boosts productivity, investment and investment (IPE) is a crucial category. Investment is essential to developing a competitive tourist industry because of the new difficulties and development opportunities that come with the industry's rapid growth in many nations. Strong growth that continues increases the demand for new investments and puts stress on the infrastructure that is already in place. In order to preserve and improve current tourism offerings and create new goods, investments in high-quality tourism should manage growth in a sustainable and inclusive manner.

Increasing added value in tourism requires decreasing energy consumption (EC). This also implies that value added, employment, and income may all suffer as a result of energy shortages. Environmental taxes and fees (ET) can be used to lower other taxes, ensuring that both the environment and the economy would benefit.

Environmental taxes are a crucial tool for advancing sustainable development and are crucial in reducing the harmful externalities of pollution. The historical relationship between economic growth and emissions growth demonstrates that greenhouse gases and economic expansion are mutually exclusive. Despite a trend toward declining emissions per person, wealthy nations continue to produce more greenhouse gas emissions than emerging nations. However, progress results in the launch of fresh energy-saving technologies.

An examination of social indices of sustainable development found a significant research gap and a dearth of empirical studies in the concerned area. Tourism is anticipated to suffer as a result of the consequences of accidents at (TAW) in terms of lost time, diminished productivity, property damage, medical expenses, employee compensation costs, and morale. Workers with tertiary education (TPTED) are individuals who have attained the highest level of education. This applies to both theoretical programs that prepare students for advanced study or highly skilled employment and more practical ones that prepare students for the workforce. The need for people with a broader knowledge base and more specialized abilities is constantly increasing as globalization and technology modify the requirements for the labor market around the world, and these people tend to have more education and experience. SVA is anticipated to benefit from Social Security Expenditure (SSC), which promotes investments in human capital, a key source of productivity increases. Social security's primary objective is to build the resilience of low-wage and disadvantaged workers by reducing their level of poverty through transfers that increase their income.

The impact of the determinants of the sustainability of tourism development on the movement of the sector's sustainable added value in the EU member states will be analyzed using DEA and panel analysis. The Triple Bottom Line (TBL) methodology is used in the empirical study to quantify how well businesses are performing in ways other than just financially. The importance of using a holistic approach to evaluate all pertinent factors is emphasized in order to support current trends and discussions in this area of interest. The study presented in this publication makes a number of contributions to already conducted scientific research. First of all, prior research has not examined the relationship between sustainable value added and variables

affecting sustainability in the tourist sector holistically. The TBL framework is used to study and present for the first time the dynamic relationship between the sustainable added value of tourism and the economic, environmental, and social determinants of sustainability. Second, unlike earlier studies, this analysis considers the utilization of renewable energy and its technical effectiveness in the EU tourism sector.

For the purposes of this work, the formulation of the research model is approached in accordance with the aforementioned research problems. Empirical research is based on a combination of sustainability variables or determinants that have been utilized in prior studies and novel indicators that have not been the focus of prior assessments. The specification of the variables of interest and the analysis of the tourism development sustainability model based on the aforementioned indicators served as the foundation for the explanation of the research model, the description of the data, and the methodology utilized. The Interreg MEDITERRANEAN initiative, which makes use of a development plan created by the Kedge Bussines School, serves as the foundation for the creation of the research model.

The development of the research model is centered on the analysis and development of the sustainability model, which is primarily based on the economic model of business added value (VA) within the framework of business productivity and the Cobb-Douglas production function as one of the most frequently used productivity measures in theoretical and empirical research. The foundation of the overall production function is the effectiveness of labor and capital as primary production resources. The examination of inputs into the production process is based on evaluating the elasticity or efficiency of utilised resources whereas the gross added value (GDP), which is a production measure, is the most common indicator of added value at the macroeconomic level.

In a two-stage analysis, the influences of economic, environmental, and social factors or variables on the movement of SVA were investigated. The relative effectiveness for each country in each year was calculated in the first stage using one indicator from each of the three pillars and the findings of the DEA study. The efficiency data were utilized to develop a new dummy variable that displays the relative efficiency of nations, giving effective nations a value of 1, and ineffective nations a value of 0.

With additional indications from the three pillars that were not included in the first stage analysis, the generated new variable was employed in the second phase of the analysis. As was already noted before, a dynamic panel analysis of data containing economic, environmental, and social indicators was utilized in the second phase of the analysis because the majority of the variables exhibit dynamic behavior.

In order to investigate the effects of a continuous renewable energy source on SVA, the proportion of RES in total energy consumption (RES_dum) was introduced. A member country is given a number of 1 if its proportion of renewable energy sources (RES) in all energy sources is at least 15%; otherwise, the value is 0. Additionally, a dummy variable called "Efficient_dum" was included to distinguish between efficient and inefficient nations based on the findings of technical efficiency or efficiency derived via DEA data analysis. To test the model's robustness, technical efficiency results (DEA_score) were also included as an independent variable in the econometric model.

The empirical study incorporates all NACE Rev. 2 activity classification categories for the EU 27 member countries and draws information from the European statistical database Eurostat for the years 2013. through 2019. The following are included in the definition of tourist activities and services: services linked to all types of lodging, serving and serving of food and beverages, services related to travel agents, tour operators, and other reservation services. According to their relative change or elasticity and their impact on the movement of SVA, the variables within the economic, environmental, and social pillars are examined in the research model's specifications. The statistics database's data availability, unbalanced data, and inconsistent data updates at the time of the analysis placed restrictions on its scope.

The average realized gross added value among member nations is 31.51 million € in monetary terms. The biggest standard deviation occurs between observation units, but it barely exists within observation units. Following Austria (65 million € per 1,000 employees, and France (55 million € per 1,000 employees), Luxembourg has the highest SVA in the tourism sector among EU members (92.92 million € per 1,000 employees). The SVA for Bulgaria is the lowest, at 6.98 million € for every 1,000 workers. For every 1000 people in this industry, fixed capital is on average 8.15

million €. Additionally, Slovakia has the smallest fixed capital (0.89 million) while Luxembourg has the biggest fixed capital (92.92 million € per 1,000 employees). For every 1,000 employees, the tourism industry invests on average EUR 3.29 million €. The country with the most investments per 1,000 employees is France (7.45 million €), while Greece recorded the lowest investments (1.56 million € per 1,000 employees). Luksemburg has the lowest realized income per 1,000 employees (94 million €), while Austria has the greatest realized income (805 million € per 1,000 employees).

DEA is a non-parametric data analysis technique that serves as a foundation for creating research models. It is a strategy for evaluating a DMU's efficiency or effectiveness that makes use of linear programming techniques so that numerous inputs and outputs can be taken into account at once without assuming data distribution. Efficiency is always determined by the proportional change in input or output. When compared to all other observed decision-making units, an efficient decision-making unit maximizes the level of input values of production factors for the same level of output values (performance-oriented DMU) or minimizes the level of input values of production factors for the same level of output values. A collection of effective DMUs defines the limit of efficient production. According to DEA analysis, a nation or decision-making unit (DMU) that reaches the optimal value of 1 (100% relative efficiency) is on the efficiency frontier and is regarded as relatively efficient in the sense that it cannot grow its outputs without increasing its inputs. A country is said to be somewhat inefficient if it has an efficiency score below 1, which indicates that it might produce its current level of output with fewer inputs. Every nation has a specific number of inputs (i) and outputs (o), which means that it uses a specific number of inputs to produce a specific number of outputs.

The division of countries was made after the DEA data analysis, and the study further explores the differences in the relative efficiencies of production inputs between the two observed groups of countries, technically efficient and technically inefficient EU member states. A type of information for the panel data analysis is provided by the outcomes of the DEA analysis. According to the findings of the DEA study, 7 out of the 27 member states use production inputs technically efficiently in terms of investment per employee, final energy consumption, and social security costs.

Denmark, Italy, Luxembourg, the Netherlands, and Spain attained technical efficiency in the majority of the observed years, whereas Austria and Germany did so in every year. The findings demonstrate that inefficient member nations do not make adequate investments and incur sufficient social security expenses in the tourism industry. Technically advanced member states, on the other hand, use less energy and have higher investment and social security costs per 1,000 workers. In contrast to other member countries, efficient countries have the highest performance and the highest level of efficiency. Inefficient member countries have deficits in two inputs and surpluses in one input in comparison to output. A new dummy variable designating efficient and inefficient countries in terms of their sustainable value added was created using the findings of the DEA data analysis. In the GMM data analysis, this variable served as one of the controls.

Technical effectiveness or efficiency refers to how input and output are related throughout production. There are various sorts of efficiency, and technical efficiency is a standard that maximizes output while minimizing input. Three optimization metrics—technical efficiency, pure technical efficiency, and scale efficiency—are used in DEA data analysis. All of the efficiencies have values that range from 0 to 1, with the observation unit that has a value that is closer to 1 also having a better technical efficiency. The ability of the observation unit to get the most out of its resources is known as technical efficiency. If one observation unit produces more or offers more services than another, it is theoretically more efficient than that other unit.

Most economic relations are dynamic in nature, which means that the current value of a variable depends on the previous values of that same variable. Dynamic panel econometric models contain a dependent variable with one or more lags in backward time periods, depending on the properties of the dependent variable. When evaluating static models, it is possible to lose important information, and in that case the evaluation results will be inconsistent and biased. Assessment through dynamic models is motivated by the nature of the relationship and the dynamic aspect of the phenomena being analyzed and investigated, so the assessment of the dynamic model allows for dynamics in the underlying processes, which can be crucial for obtaining consistent estimates of the remaining parameters. Since economic, environmental and social variables show dynamic behavior, the second stage of the

analysis is carried out using dynamic panel models. The most commonly used estimators in dynamic panel data analysis are the Generalized Method of Moments (GMM) estimator proposed by Arellano and Bond (1991) and the GMM system estimator proposed by Arellano and Bover (1995) and Blundell and Bond (1998).

Additionally, the movement of sustainable added value (SVA) in the observed tourism sector among the 27 EU member states is identified, with the movement of the latter being primarily influenced by economic and environmental (energy) indicators. With the analysis of panel data for the years 2013. to 2019. using dynamic panel estimators, a multiple linear functional form of regression (GMM) was assumed. The obtained findings support earlier studies that showed a significant impact of economic and environmental factors, particularly renewable energy sources (RES) and greenhouse gas emissions, on the movement of SVA. With the shift of the production process from primary resources (capital and labor) to resource-oriented inputs and subsequently increasing their efficiency, tourism businesses can lessen their environmental impact by improving resource use efficiency, primarily through the reduction of greenhouse gas emissions and the increased use of RES.

The findings demonstrate that in all model specifications, the dependent variable with a shift is statistically significant and positive. Growth from the prior year has an accumulating effect on economic growth in the current year. It also suggests that the past value of sustainable value added has a positive effect on the current value of sustainable value added in the tourism sector. Having a high SVA in the past creates a chance for having a greater SVA in the future. Dependent variable was employed primarily due to the dynamic effects of tourism and its uncertainty on economic growth in a global context for various income levels.

Separately, whereas income (TPE) has a favorable and statistically significant effect on SVA, fixed capital (FCE) does not. Furthermore, when accounting for the environmental and social determinants of sustainability, the DEA_score, and including variables in the model specification showing member countries with a higher share of renewable energy sources in total energy sources, as well as dummy variables for technically efficient countries, both economic indicators, fixed capital (FCE) and income (TPE), are significant and have the expected positive signs. The

acquired results support the first auxiliary research hypothesis, i.e., the research hypothesis (P.H.1) is not rejected, which indicates that there is evidence of a positive and substantial relationship between fixed capital (FCE) and income per employee (TPE) on the movement of SVA.

Countries with higher fixed assets are more likely to be able to employ those assets to create income and, as a result, higher SVA. This is supported by higher fixed capital in the tourist sector. Higher levels of fixed capital advance the industry's technology and boost output, which in turn promotes specialization. Along with the creation of new employment prospects, the industry's income is also increased, which benefits both the person and the sector as a whole. The findings of the analysis of the relationship between income and SVA reveal that higher income is associated with higher worker productivity in the tourism industry, which ultimately results in a higher level of value added. The results obtained demonstrate that member countries with higher incomes use their resources wisely, i.e. they invest in their employees, which consequently leads to an increase in their productivity.

When environmental indicators are adjusted for economic and social determinants of sustainability, DEA_score, and when variables showing member countries with a higher share of renewable sources of energy in total energy sources, as well as dummy variables for technically efficient countries, are included in the model specification, the environmental indicator, greenhouse gas emissions (CO2), is significant and has a positive sign in all model specifications. In all model specifications the environmental variable known as environmental taxes and fees (ET) is not relevant. The second research assumption (P.H.2), which argues that there is a visible, positive, and considerable impact of environmental variables on movement of SVA, is only partially supported by the results.

The research results show that not a single determinant or variable from the social pillar has a significant impact on SVA in tourism. Social variables are not significant in any of the model specifications, i.e. when all variables are considered together with DEA_score and when variables are included in the model specification showing member countries with a higher share of renewable energy sources in total energy sources, as well as dummy variables for technical efficient countries.

The obtained research results are not in accordance with the third auxiliary hypothesis of the research (P.H.3), where the assumption of the research that says that there is a statistically significant influence of the social variables of sustainability (TFW and TPTED) on the movement of SVA in the tourism of the EU member states is completely rejected. one of the social variables did not prove statistically significant in any of the model specifications.

As the tourism industry transitions from a resource-oriented production process to an environmental sustainability-oriented production process, increased greenhouse gas emissions will initially cause a rise in SVA. In all model parameters, greenhouse gas emissions show a positive and significant effect on SVA. The findings demonstrate that greenhouse gas emissions have a favorable impact on SVA, which can influence how well economic development is done.

Due to the fact that it demands more inputs and thus uses more natural resources, economic growth implies higher pollution due to rising SVA, because it uses more natural resources and has higher input requirements. In order to reduce the detrimental external environmental effects on the tourism industry, it is crucial to focus more on the quality of economic development. In order to ensure sustainable economic development in the tourism industry, laws and regulations must be revised and new ecological and economic tools must be applied. This is because the effectiveness of environmental protection policies has decreased.

Additionally, a considerable and advantageous influence on the development of SVA was revealed by the variable displaying the proportion of RES in the overall energy sources. Countries with a reduced need for traditional energy sources might develop new employment possibilities associated to the usage of RES. RES has already demonstrated the impact of job growth. For instance, compared to energy produced via conventional sources, energy produced through solar photovoltaic cells creates more jobs per unit of energy produced. Longer and more varied supply chains, increased labor intensity, and increased net employment are the causes of RES's favorable impact on job development. The acquired results support the fourth auxiliary hypothesis of the study, which claims that the movement of SVA is

significantly and favorably influenced by the proportion of renewable energy sources (RES).

However, there is no comprehensive framework for choosing social indicators that can be used to determine whether the tourism industry has a good or negative impact on SVA. Although there is a sizable body of literature on methodology and approaches for choosing social indicators for the development of sustainable tourism, there is a gap in empirical studies that can be attributed to a lack of data, particularly for a larger group of countries like the EU 27. The authors utilize various social variables depending on the data's availability and the focus of the research, which makes comparing empirical studies very challenging.

In order to test the significance of the difference in the achievement of SVA when it comes to countries with a higher share of renewable energy sources in total energy sources, and between technically efficient and inefficient member countries, two dummy variables were added to the model specifications, as it was previously stated: one variable for the technical efficiency of the country and another for the share of renewable sources in total energy sources (Model 6). Both dummy variables are statistically significant when considered separately and together with the efficiency score (DEA_score). The obtained results of the research are in accordance with the fifth scientific hypothesis of the research, i.e. the fifth assumption of the research was not rejected, which states that there are statistically significant differences in the relative efficiency of the use of production inputs in the tourism sector of the EU member states, and the assumptions about this hypotheses are valid completely.

According to the efficiency assessment obtained by DEA analysis, there are statistically significant differences between technically efficient and technically inefficient countries in the creation of SVA in tourism. The differences were examined in such a way that efficient countries were assigned a value of 1, while inefficient countries were assigned a value of 0. Empirical results show significant differences in the creation of SVA between the two groups of countries in tourism. The two groups of countries differ in their efficiency in using production inputs such as investment, energy consumption and social security costs per employee. Technically efficient countries are more efficient in using production inputs to create SVA in the tourism

sector. Investments will increase the efficiency of the tourism sector, while higher levels of social security and spending will also lead to a larger SVA of the tourism. Moreover, efficient countries consume less energy than the EU average when generating the same level of SVA. Efficient countries are more efficient in the use of environmental inputs, especially RES, since they have a strong positive effect on SVA when they are above the EU average.

Keywords: sustainable development of tourism, determinants of sustainability, added value, renewable energy sources, EU member countries, bibliometric analysis, DEA analysis, panel analysis

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KLASA: 643-01/23-01/61

UR.BROJ: 2170-1-41-01-23-1

U Rijeci, 06.10.2023.

POTVRDA

Potvrdjuem da je lektorirani naslov doktorskog rada doktorandice Ane Trstenjak,

Determinants of the Sustainability of Tourism Development Aimed at Creating Added Value – the Case of EU Member Countries

u skladu s normom engleskog standardnog jezika.

Jadranka Kim Musa

Jadranka Kim Musa, Visa lektorica

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KLASA: 643-01/23-01/60
URBROJ: 2170-1-41-09-23-1

U Rijeci 28. rujna 2023.

POTVRDNICA

Potvrđujem da je predloženi naslov doktorskoga rada

Odrednice održivosti razvoja turizma u funkciji kreiranja dodane vrijednosti - primjer zemalja članica EU

pristupnice Ani Trstenjak

u skladu s normama hrvatskoga standardnog jezika.

doc. dr. sc. Maša Plešković
ovlaštena lektorica

SVEUČILIŠTE U RIJECI
EKONOMSKI FAKULTET

KLASA. 643-03/23-04/05
URBROJ: 141-07-23-002

Rijeka, 18. rujna 2023. godine

Temeljem članka 65. Pravilnika o studijima Sveučilišta u Rijeci te članka 11. Pravilnika o doktorskom studiju Ekonomija i poslovna ekonomija Ekonomskog fakulteta u Rijeci, Fakultetsko vijeće Ekonomskog fakulteta u Rijeci na 287. sjednici održanoj 18. rujna 2023. godine donijelo je

O D L U K U

Prihvaća se prikaz rezultata istraživanja doktorskog rada doktorandice Ani Trstenjak, univ. spec. oec., pod naslovom:

„Odrednice održivosti razvoja turizma u funkciji kreiranja dodane vrijednosti – primjer zemalja članica EU".

EKONOMSKI FAKULTET SVEUČILIŠTA U RIJECI

DEKAN:
Prof. dr. sc. Saša Drezgić

DOSTAVITI:
1. doktorandici
2. mentoru i komentorici
3. pismohrana

SVEUČILIŠTE U RIJECI
EKONOMSKI FAKULTET

KLASA: 643-03/22-03/009
URBROJ: 141-07-23-005

Rijeka, 21. ožujka 2023. godine

Temeljem članka 33. Pravilnika o studijima Sveučilišta u Rijeci te članka 11. i čl.33 Pravilnika o poslijediplomskom sveučilišnom (doktorskom) studiju Ekonomije i Poslovne ekonomije Ekonomskog fakulteta u Rijeci, Fakultetsko vijeće Ekonomskog fakulteta u Rijeci na 280. sjednici održanoj 20. ožujka 2023. donijelo je

O D L U K U

Prihvaća se tema doktorske disertacije doktorandice Ani Trstenjak, univ. spec. oec., pod naslovom

„Kako učiniti turistički sektor EU zelenijim, efikasnijim i održivijim – primjer članica EU i izabranih mediteranskih zemalja".

DEKAN:

Prof. dr. sc. Saša Drezgić

DOSTAVITI:

1. Ani Trstenjak, univ. spec. oec.
2. mentoru i komentorici
3. pismohrana

European Curriculum Vitae Format

OSOBNI PODACI

Ime i prezime	**Ani Trstenjak**
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Elektronička pošta	ani.trstenjak@ri.t-com.hr
Državljanstvo	Hrvatsko
Datum rođenja	25. travnja 1980.

RADNO ISKUSTVO

Datum (od-do)	2009.- ...
Ustanova zaposlenja	STAR d.o.o.
Naziv radnog mjesta	Booking manager
Područje rada	Rijeka
Datum (od-do)	2000. – 2002.
Ustanova zaposlenja	TIP-TOP Sport d.o.o.
Naziv radnog mjesta	Komercijalist
Funkcija	Zaposlenik
Područje rada	Rijeka

ŠKOLOVANJE

Datum	2019. -
Mjesto	Rijeka
Ustanova	Sveučilište u Rijeci, Ekonomski fakultet u Rijeci/
Zvanje	Poslijediplomski doktorski studij (180 ECTS)
Datum	2014.- 2015.
Mjesto	Rijeka
Ustanova	Sveučilište u Rijeci, Ekonomski fakultet u Rijeci/
Zvanje	Program za stjecanje nedostajućih znanja, vještina i kompetencija za upis na poslijediplomski specijalistički studij (30 ECTS)
Datum	2012.- 2014.
Mjesto	Rijeka
Ustanova	Veleučilište u Rijeci
Zvanje	Stručna specijalistica poduzetništva, struč. spec. oec. (120 ECTS, diplomski studij)
Datum	2009. – 2012.
Mjesto	Rijeka
Ustanova	Veleučilište u Rijeci
Zvanje	Stručna prvostupnica ekonomije, bac. oec. (180 ECTS, prediplomski studij)
	1994. – 1998.
	Rijeka
	Ekonomska škola u Rijeci
	Ekonomski tehničar

Datum	2012.- 2015.
Mjesto	Rijeka
Ustanova	Narodno Sveučilište
Zvanje	A1-B1 opći talijanski jezik
Datum	2016.- 2020.
Mjesto	Rijeka
Ustanova	Francuska alijansa
Zvanje	A1-B2 francuski jezik
Datum	2017.- 2018.
Mjesto	Rijeka
Ustanova	Ekonomski fakultet u Rijeci
Zvanje	A1 kineski jezik
Datum	2018.- 2020.
Mjesto	Rijeka
Ustanova	Jezična škola Omnia
Zvanje	A1 ruski jezik

STRUČNI SEMINARI

Datum	2012.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Zvanje	E-Marketing set
Datum	2012.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Novi poduzetnički pothvat
Datum	2013.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Sam svoj dizajner
Datum	2013.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Inovacija poslovnog modela
Datum	2015.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Kako do bespovratnih sredstava iz nac. programa i EU fondova
Datum	2015.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Istraživanje tržišta
Datum	2015.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Psihologija potrošača i određivanje cijena
Datum	2016.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Sadržajni (content) marketing
Datum	2016.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Sadržajni (content) marketing

Datum	2016.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Kako osmisliti i napisati EU projekt
Datum	2016.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	EU fondovi
Datum	2016.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Poslovno planiranje
Datum	2017.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Kako poslovne stranice prilagoditi kupcu
Datum	2018.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Upravljanje vremenom
Datum	2018.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Upravljanje vremenom
Datum	2018.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Alati za optimizaciju i analizu web stranica
Datum	2018.-2023.
Mjesto	Rijeka
Ustanova	Znanstveno teh. park Sveučilišta u Rijeci
Naziv	Branding i komercijalizacija u turizmu
Datum	2018.-2022.
Mjesto	Zagreb
Ustanova	Ekonomski fakultet u Rijeci
Naziv	Alumni konferencija MBA studija

OSTALA PRIZNANJA

Dobitnica dekanove nagrade za najbolji uspjeh postignut u ak. god. 2013./2014. na spec. dipl. stručnom studiju Poduzetništvo

4. Znanstveno – međ. stručna konferencija Jahorina business days (JBD 2015.) - Turizam u funkciji ekonomskog razvoja

Član Francuske alijanse od 2016.

Predsjednik bir. odbora - lokalni izbori

Član U. O. Francuske Alijanse u Rijeci

Članica Društva za oblikovanje održivog razvoja (DOOR) od 2020.

Članica Mreže za promicanje žena u energetskoj tranziciji (X-Energy) od 2022.

OSOBNE VJEŠTINE

Materinski jezik: Hrvatski

Jezik	Njemački	Engleski	Talijanski	Francuski	Ruski
Govori	X	X	X	X	X
Piše	X	X	X	X	X
Čita	X	X	X	X	X

SPECIJALNE VJEŠTINE I KOMPETENCIJE: Urednost i točnost, Posvećenost poslu i radišnost, Želja za učenjem i usavršavanjem

SOCIJALNE VJEŠTINE I KOMPETENCIJE: Sposobnost prilagodbe novom okružju, razvijen smisao za komunikaciju i organizaciju

BRAČNI STATUS: udana

VOZAČKA DOZVOLA: Da, B kategorija

DOZVOLA ZA VODITELJA BRODICE: Da, B kategorija

OSTALI INTERESI: Glazba, enigmatika, jedrenje, putovanja

OBJAVLJENI ZNANSTVENI RADOVI: Prilog

VLASTORUČNI POTPIS

POPIS OBJAVLJENIH RADOVA

Trstenjak, A., Tomas Žiković, I., Žiković, S. (2023) *Making tourism more sustainable: empirical evidence from EU member countries*, Environment, Development and Sustainability (u objavi)

Trstenjak, A., Tomas Žiković, I., Žiković, S. (2023) *How to Make EU Tourism Sector Greener, more Efficient and Sustainable: A Bibliometric Analysis*, International Journal of Energy Economics and Policy, Vol.13(2) (https://doi.org/10.32479/ijeep.13926)

Trstenjak, A. (2021) *EU Tourism sector as more greener, efficient and sustainable: static panel data analysis*, Economics and Business of the post COVID19 World, Economics of Digital Transformation (EDT), International Scientific Conference, Opatija 2021.

Trstenjak, A., Žiković, S. and Mansour, H. (2020) *Making nautical tourism greener in the Mediterranean*. Sustainability, Vol. 12(16), p. 6693. (https://doi.org/10.3390/su12166693)

Trstenjak, A., Stilin, A., Tomljenović, Lj. (2015) *Investigation of motivation of employees in the charter enterprises of nautical tourism*, Proceedings of the Faculty of Economics in East Sarajevo, Vol. 4(11), pp. 39-48. (https://doi.org/10.7251/ZREFIS1511039T)

SVEUČILIŠTE U RIJECI
EKONOMSKI FAKULTET

Klasa: 643-03/19 -19 / 5
Ur. br. 2170-57/19 -19/21

Rijeka, 03. travnja 2019.

Na temelju članka 28. Pravilnika o poslijediplomskom sveučilišnom studiju (doktorskom studiju) Ekonomija i poslovna ekonomija Ekonomskog fakulteta u Rijeci, povodom zahtjeva doktorandice Ani Trstenjak, Povjerenstvo za poslijediplomske studije i doktorate je na 303. sjednici održanoj dana 01. travnja 2019. donijelo slijedeću

ODLUKU

O PRIZNAVANJU ECTS BODOVA

1. Povjerenstvo je na temelju zahtjeva i dokumenata priloženih uz zahtjev utvrdilo da je doktorandica Ani Trstenjak na Ekonomskom fakultetu Sveučilišta u Rijeci završila sveučilišni poslijediplomski specijalistički studij Ekonomija energetskog sektora.

2. Povjerenstvo je utvrdilo da na temelju završenog poslijediplomskog studija navedenog u točki 1. ove odluke doktorandica posjeduje kompetencije ekvivalentne kompetencijama koje se stječu završetkom poslijediplomskog specijalističkog studija u Republici Hrvatskoj.

3. Sukladno iznesenom doktorandici Ani Trstenjak priznaje se 60 ECTS bodova na poslijediplomskom sveučilišnom studiju (doktorskom studiju) Ekonomija i poslovna ekonomija Ekonomskog fakulteta u Rijeci.

Predsjednica Povjerenstva:

Prof. dr. sc. Helena Blažić