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ЛОГИСТИКАТА ВО 21 ВЕК**

**CHALLENGES OF TOURISM AND BUSINESS  
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**ЗБОРНИК НА ТРУДОВИ  
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Prof. Gligor Bishev, University Professor and Chairman of the Board, Sparkasse Bank-Skopje – “*The impact of the pandemic on economic developments*”

Peter Tabak, Executive Director, Leading Regional Economist for Economics, Policy and Governance in the Western Balkans Vice-President for Policy and Partnerships, European Bank for Reconstruction and Development - “*Economic outlook for the Western Balkans during and after the epidemic*”

Milan Zdravkovic, Executive Director of the Distribution System Operator in J.P Srbijagas, Belgrade, Serbia – “*Supply of natural gas in COVID-19 conditions - experience and expectations*”

Prof. Misko Dzidrov, University Professor and Vice-rector for Teaching and Students, Goce Delcev University of Stip – “*UGD in a time of pandemic*”

Prof. Tatjana Boskov, University Professor and Dean of the Faculty of Tourism and Business Logistics, Goce Delcev University of Stip – “*The impact of coronavirus on global growth and global supply chain shifts*”

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**ФАКУЛТЕТ ЗА ТУРИЗАМ И БИЗНИС ЛОГИСТИКА**  
**FACULTY OF TOURISM AND BUSINESS LOGISTICS**

ТРЕТА МЕЃУНАРОДНА НАУЧНА  
КОНФЕРЕНЦИЈА

THIRD INTERNATIONAL  
SCIENTIFIC CONFERENCE

**ПРЕДИЗВИЦИТЕ ВО ТУРИЗМОТ И БИЗНИС**  
**ЛОГИСТИКАТА ВО 21 ВЕК**

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13 ноември, 2020, Штип / Shtip, November 13<sup>th</sup>, 2020

## ПРЕДГОВОР

Факултетот за туризам и бизнис логистика при Универзитетот „Гоце Делчев“ во Штип, беше организатор на Третата меѓународна научна конференција „Предизвици на туризмот и бизнис логистика во 21 век“. Конференцијата се одржа на 13 ноември 2020 година на платформата Microsoft Teams, со повеќе од 90 учесници од матичната земја и странство. Оваа година Меѓународниот научен комитет брои еминентни професори од нашата земја и над 15 странски земји како Израел, Шпанија, Франција, Молдавија, Италија, Грција, Египет, Полска, Турција, Романија, Бугарија, Србија, Хрватска, Босна и Херцеговина и Словенија.

Целта на оваа конференција е да промовира поголемо разбирање на бизнис администрација, логистиката, туризмот и угостителство во однос на управувањето, економијата, образованието и претприемништвото. Ова подразбира дека фокусот на учесниците го насочивме кон најновите трендови и предизвици во врска со развојот на туризмот, менаџирањето со компаниите, пазарот на труд, можностите за придобивки и профит, изгледите за подобра конкурентност на меѓународниот пазар, што пак е императив за финансиската стабилност на нашата земја во целина.

Имено, со пристигнатите трудови и авторските истражувања се оствари целта на конференцијата - а тоа е оценувањето на тековната состојба и идните изгледи за развој на микро план што се однесува на домашниот пазар, како и движењата на глобалната економија, подготвувајќи ја бизнис заедницата за предизвиците со кои ќе се соочуваат при остварувањето на нивните цели, што де факто влијае врз одржувањето на финансиите особено во времето кое го живееме под притисокот на пандемијата.

Препораките кои се пренесоа се однесуваат како да се зајакнува капацитетот на компаниите како и промените во регулативите кои го диктираат нашиот пат кон ЕУ. Дискусиите во текот на конференцијата беа одговор на тоа како реагираа и се позиционираа менаџерите на финансиски средства во услови на голем пазарен ризик, пазарни шокови и турбуленции и како треба да се подготвуваат инвеститорите во поедини сектори. Трудовите прикажаа изгледи и кон идната интеграција на земјите од Западен Балкан, со осврт на досегашните постигнувања и идните предизвици пред овие економии како и размена на искуства на сите учесници кои сме денес присутни од повеќе земји.

Токму овие препораки треба да бидат двигател на процесите на реформата во насока на подигање на квалитетот на образованието заради поголема продуктивност на трудот, конкурентност на економијата и намалување на неусогласеноста на понудата на вештини и компетенции како и побарувачката на пазарот на труд.

Постигнувањето на овие цели е заедничка задача на сите оние што се во позиција да го дадат својот придонес за имплементација на реформите во општеството. Токму тие реформи, тие промени во начинот на пристап, методологија на работа и организација, не треба да ги правиме само за да станеме дел од економскиот блок, туку да бидат во насока да постигнеме нешто друго, многу позначајно, односно сите напори што ги правиме да бидат за остварување на повисок степен на благосостојбата на нашите граѓани, за создавање на достоинствени услови за живот и работа.

Во регионот, меѓутоа и пошироко, во Европа, искуствата се најразлични. Наидуваме на успешни, и на не толку успешни модели. Токму ваквите научните конференции, дебатите што се развиваат тука, се најдобриот начин за размена на искуства, за идентификација на предизвиците и перспективите, за споредување на моделите и третирањето на нивните недостатоци или предности, меѓутоа и презентирање

на можните нови комбинирани модели. Едукацијата на новите генерации кои ќе бидат подготвени да се соочат со предизвиците што ги носи глобализацијата, е заеднички предизвик на Универзитетите, на бизнис заедницата, но и на централната и локалната власт.

Штип,  
13 Ноември 2020

Главен уредник  
Проф. д-р Татјана Бошков, *Декан*

## PREFACE

The Faculty of Tourism and Business Logistics in Gevgelia, part of the University Goce Delchev from Shtip, hosted the Third International Scientific Conference, "Challenges of Tourism and Business Logistics in the 21st Century". The conference was held on 13<sup>th</sup> of November 2020 on the platform Microsoft Teams, with more than 90 participants from the country and abroad. This year the International scientific committee included eminent professors from our country and more than 15 from foreign countries, such as Israel, Spain, France, Moldova, Italy, Greece, Egypt, Poland, Turkey, Romania, Bulgaria, Serbia, Croatia, Bosnia and Herzegovina and Slovenia.

The aim of this conference is promoting a greater understanding of the business administration, logistics, tourism and hospitality in terms of management, economics, education and entrepreneurship. In that context, the focus of our participants was on the latest trends and challenges related to tourism development, company management, labour market, opportunities for gain and profit, opportunities for better competitiveness in the international market, which is imperative for the financial stability of our country entirely.

Furthermore, the conference papers and authors' researches fulfilled the aim of the conference, the assessment of the current situation and future prospects for the development of the micro plan in terms of the domestic market, as well as the global economy changes, prepared the business community for the challenges that will they face during their goal achievement, which de facto affects the maintenance of finances especially in the time we live under the pandemic pressure.

The detection of the conditions that have been presented is a real mirror of where we are, where we have been, and what is even more difficult, to answer the question what next? Achieving these goals is a common task of all those who are in a position to contribute to the implementation of reforms in society. Exactly those reforms, those changes in the way of approach, methodology of work and organization, we should not make only to become part of the economic block, but to be in the direction of achieving something else, something much more significant - efforts for achieving a higher degree of well-being of our citizens, for creating dignified living and working conditions.

In the region, but also beyond, in Europe, the experiences are diverse. We come across successful and not so successful models. Exactly such scientific conferences, debates that develop here, are the best way to exchange experiences, to identify challenges and perspectives, to compare models and how to treat their disadvantages or advantages, but also to present possible new combined models. The education of the new generations that will be ready to face the challenges posed by globalization is a common challenge of the Universities, the business community, but also of the central and local government.

Shtip,  
November, 13<sup>th</sup>, 2020

Editor  
Tatjana Boshkov, Ph.D. *Dean*

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## COMPUTERIZED BOOKING SYSTEMS: ICT READINESS CONTEXT FOR BALKAN COUNTRIES

*Žarko Rađenović<sup>1</sup>*

### Abstract

*The aim of this paper is to emphasize the importance of computerized booking systems for the digitalization development digitalization in travel and tourism sector. The digital tourism age brings the implementation of hospitality information systems, where it is necessary to determine the readiness of stakeholders in the tourism sector to implement and share this innovation. Accordingly, in this paper, the ICT readiness indicator of the World Economic Forum will be used to rank the Balkan countries when it comes to the application of information systems in tourism. Ranking will be performed using the multicriteria decision making method in Visual PROMETHEE software.*

**Key Words:** *computerized booking systems, e-travel, hospitality information systems, ICT readiness indicator, PROMETHEE*

**JEL classification:** *Z32, C87*

### Introduction

Globalization, innovations and the development of technology, or more precisely information and communication technology, has influenced the advancement of the travel industry, among other things. Therefore, today, the main tool used in the industry is the computerized booking systems, also known as Global Distribution System. Thanks to this tool, the availability, frequency and speed of communication among the companies that are providing services to potential tourists, increases. Looking around us not only in business but in economy, education, transportation, could not be imagined today without new communication and information technologies. For example, when talking about the industry, computers are needed to speed up some factory works; they are necessary for computation of bank statements; in schools they are used for enrolment and grading systems, but not only that. With the realization of how important computers are, to speed up communication, as a means for transferring data for business needs, made it an outstanding tool with which hotels, travel agencies, airlines and other sectors of the industry can easily access vital travel information, and their clients' travel needs. Global distribution systems are used only for information transfer, storing current information about all available service providers and they have the necessary infrastructure to transfer such data. Together with information and communication technologies, tourism distribution system development has transformed the competitive environment of the tourism industry in a short period of time. The main advantage in using global distribution systems is that it increases the availability, frequency and speed of communication among companies that are providing services to potential tourists (Chau, 2001). Global distribution system, by definition, is a worldwide computerized reservation network, used as a single point of access for reserving airline seats, hotel rooms, rental cars, and other travel related items by travel agents, online

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reservation sites and large corporations. In other words, it's the name for a computerized travel and tourism reservation system operating worldwide, providing a fast, secure and efficient way of accessing travel and tourism information, and booking. The fact that buying and selling on the internet has reached ubiquitous proportions, explains how the traditional model of travel services changed with the Internet. Nowadays, consumers are looking for a convenient and comfortable way to purchase goods and services, starting from clothes shopping to booking a hotel and buying an airplane ticket.

Some of the most used global distribution systems in the tourism and travel industry are: Amadeus, Galileo, Sabre and Worldspan. Sabre (Semi-Automated Research Environment), launched in the early 1960s, was the first computerized airline reservation system, developed by American Airlines in conjunction with IBM. Today, it is used by more than a billion people around the world to plan, book and experience their travel at a time and price that is suitable for them. This system helps travellers to find best price, improve a travel agency's efficiency and profitability, and allow someone to book travel online. Amadeus, for instance, is a leading provider of advanced technology solutions, whose customer groups include travel providers, travel sellers and buyers. The offer this system has, combines technology in distribution, IT, point of sale solutions, all to aid customers in taking advantage of the technology and convert it to business success. In today's world of constant increase and variety of modes and choices, technology allows travel agencies to maintain competitiveness, and in their effort and commitment to quality and providing efficient services. With the introduction of these computerized systems, there is no need for traditional methods of seeking hotel accommodation, tickets and other travel assistance, no more. It is clear that the success of one's business depends entirely on the quality of its service. This is where computerized system, which ensure the accurateness of information and data it provides, minimizes the businesses' chances of making an error, therefore ensuring the quality of its services.

### **Literature background**

Nowadays, the wonderful effects of computer can be seen and experienced in education, economy, business and transportation and tourism. At the macroeconomic level, competitiveness is often viewed through the prism of a country's success in placing goods on the international market (Marković, M., Krstić, B. & Rađenović, Ž. 2019) but tourism also has raised country's competitiveness on the next level. The aim of this paper is to examine the impact of the computer reservation systems on the operations of different travel agencies. Information and Information and Communication Technologies (ICTs) have transformed the tourism industry within a brief span of time. The use of aforementioned Global Distribution Systems in the field of tourism industry can increase availability, frequency and the communication among the companies in providing services to potential tourists (Budiasa, 2018).

Global Distribution Systems are essentially designed for logistical functions. They store up-to-date pieces of information on all available service providers and have the infrastructure necessary to process these data. Furthermore, through removing the physical distance between the manufacturer and the sales mediator or the customer, they facilitate the transport of goods (Felicen, 2016). Global Distribution System can also be defined as a worldwide computerized reservation network used by travel agents, online reservation sites, and large corporations as a single point of access for reservation of airline seats, hotel rooms, rental cars and other travel related products (Budiasa, 2018).

Travel agencies nowadays need an easily manageable website as visitors prefer to transact through websites that provide several different travel deals to them. Global Distribution Systems were developed by air lines and thereafter, travel agencies, tour operators, independent tourist accommodation units, hotel networks, car rental companies, cruise organizers etc. were linked via the Internet. Such information systems enable users (especially travel agencies and businesses, more than individual customers) to obtain information on available locations, reservations and ticket sales (Felicien, 2016). As already mentioned, the premier global distribution systems are Amadeus, Galileo, Sabre, and Worldspan. These are owned by major airlines, car rental companies and hotel groups. The well-known Sabre (Semi-Automated Business Research Environment) was developed by American Airlines in collaboration with IBM. According to Gasson (2013), it was the first computerized airline reservation system to serve American Airlines from coast to coast in the United States and from Canada to Mexico by 1964. That was the time when United Airlines created the Apollo program, TWA introduced PARS (American Airlines now owns TWA), and Delta developed DATAS. Thanks to Sabre, American Airlines was offered a competitive advantage that lasted for the first time, even though the other airlines had developed their own computerized booking systems. According to the latest information, nowadays Sabre is a S&P 500 company with a 70% interest in the online travel agency Travelocity (SABRE, 2002).

According to Gasson (2013), in the mid-1970s, airlines began offering travel agents access to direct, computerized reservation systems and the airline industry was deregulated in 1978, leading to more cost and quality competition between airlines on the same route. Computerized booking service providers provided travel agents with access to dialup telephone connections. This changed the way travel agents handled a purchase, providing them with faster and better cost and availability information. Travel agents were still important to the flight booking process, due to the fact that the customer was unable to access the advanced technologies needed to acquire this information. Even though the consumers could not use it directly, computerized booking systems allowed travel agents to provide a more efficient service. The travel agent could verify the reservation and look for alternatives if a flight was complete while the client was waiting. Travel agents were often offered free direct reservation service terminals and transfers. Typically, a travel agent would not use more than one direct booking system as it took a lot of time. Apart from Sabre, there is also well-known Global Distribution System called Amadeus. Amadeus represents the global travel industry's leading provider of advanced technology solutions. Travel suppliers, travel sellers and travel buyers are among the consumer categories. Amadeus provides the tour & tourism industry a comprehensive bid (Felicien, 2016). Also, mobile technology with application support for smart devices enables the wireless connection and communication between digital tourism platforms simultaneously, which ultimately leads to the development of future tourism machine-to-machine concept (Rađenović, Ž., Krstić, B. & Marković, M. 2020).

### **The impact of the global distribution systems on different travel agencies**

Many authors have written about this theme and in the continuation of this paragraph we will present a few studies that have had a great impact on the examination of this topic. Sevilla Felicien and Alex Ylagan conducted a research about the effects of Computer Reservation System in the operations of travel agencies. Their research aimed to analyze the computer reservation system used in Batangas City and Lipa City, Philippines travel agencies. In particular, their study defined the profile of travel agencies in Batangas, identified the reservation system used by travel agencies, services offered by travel agencies, identified the characteristics of the CRS, and evaluated the effects of using the computer reservation system

in terms of human, technological and financial aspects. For the purpose of this conduct, they have used the descriptive type of research. Questionnaire was the main tool for collecting data to obtain the essential information relevant to the use of a computerized reservation system in travel agencies. Apart from questionnaire, they also used interview in order to support and validate the data taken.

According to their research, all Batangas travel agencies use Abacus as their reservation system. It is based on the main frame which serves several different locations, such as airline ticket offices and travel agencies. It also provides consumers in both hemispheres with facilities. Abacus has been the leading provider of travel solutions and services for Asia Pacific since 1988. It helps boost competitiveness, builds better customer experience and optimizes business operations (Felicen, 2016). The results have also shown that all travel agencies offered services such as package tour, booking / booking for international hotels, domestic and international tickets. Ninety percent provide red ribbon programs, eighty-five percent provide NSO authentication and registration, eighty percent provide embassy translation / authentication and passport processing, 75 percent provide educational and leisure trips, and 65 percent provide visa and immigration assistance. Moreover, the respondents have agreed that the use of Computer Reservation Systems will link the guest with all forms of travel, such as air travel, sea travel and land travel. CRS has also worldwide links with airlines, ferries and ground transport such as rail, bus and taxi. Accommodation, as a vital component of travel, is also included in the booking process functionality. The travel agent is the one who is assured in this system that the passenger information is accurate. The results of this research have shown that using CRS can improve the efficiency and competitiveness of the agency because it can offer great expansion on transaction volumes of travel agencies with the use of automated system. Such automation will increase productivity in the planning of bookings and documents (Felicen, 2016). Angelie Marie L. Vizconde and Sevillia S. Felicen have conducted a research in order to examine the Computerized Reservation System (CRS) as a feature of business operation of travel agencies. This research was carried out to fully understand the use in travel agencies of computerized reservation system. This study has shown that travel agencies currently use the computerized reservation system in such as Abacus, Amadeus and Galileo It also identifies the potential effects of the computerized reservation system on the operation of travel agencies, identifies problems faced by travel agencies when using the reservation system, discusses solutions to identified problems for travel agencies and discusses the implications of using the computerized reservation system in travel agency operations.

They have also used the descriptive method of research for the purpose of this study. The respondents were computerized reservation system managers or consultants and users from twenty (20) different travel agencies in Ermita Manila. The respondents agreed that the positive effects of using the computerized booking system are improving the efficiency and productivity of the travel agency. They added that the use of the Computerized Reservation Systems simplifies the workload and improves customer satisfaction by providing value-added services and connects guests to all forms of travel. Apart from the positive effects, the respondents have agreed that the use of the CRS can also have negative effects on the travel agencies. Removing personnel, investing heavily in training new workers and limiting the ability of man due to more system dependency have been listed as the negative effects that the CRS have on the travel agencies. Furthermore, travel agencies often face technical problems using a computerized booking system. Among the aforementioned problems, the lack of communication lines and the difficulty with system-network connections can also be major problems when it comes to the use of CRS.

Angelie Marie L. Vizconde and Sevilla S. Felicen have concluded that Abacus, Amadeus and Galileo are the commonly used computerized reservation system in various travel agencies in Metro Manila. On the one hand, the Computerized Reservation System has a positive effect on the efficiency and productivity of the company. On the other hand, the Computerized Reservation Systems are not perfect, as there are common technical problems that can occur while using these systems. Travel agencies have to improve the system continuously in order to address the problems that occur while using this method. Although the CRS replaces manpower in carrying out any kind of tasks, human touch is still extremely important. Along with its positive and negative effects, the Computerized Distribution System has had a huge impact on the tourism industry and on the travel agencies. It can be concluded that the CRS is one of the most important tools for creating more income and achieving full guest satisfaction and retaining customers. Budiasa (2016) has also dealt with this issue. The aim of his research was to examine the factors that influence the usage of global distribution system. The variables used are for his research were *Perceived Ease of Use* and *Perceived Usefulness* (Technology Acceptance Model), *Awareness*, *Perceived Risk* and *Communication Channels*. According to Budiasa (2016) the *Perceived Ease of Use* is the extent to which a person believes that using a particular system will be free of effort. It can be defined as a person's subjective perception. *Perceived Usefulness* is the extent to which a person believes that using a particular system will improve his or her performance. *Awareness* of service has direct influence on user's intention to use the technology. *Perceived risk* can be defined as the individual's belief about the possible negative consequences. *Communication Channels* have a huge effect on the actual use of Internet as the form of technology. And the *Behavioural Intentions* is also extremely important since the individual's intention to perform or not to perform a given task is determined by their attitude towards behavior.

This research was conducted in tourism industries in Bali travel agencies, airlines and hotel companies. Questionnaire was used in order to obtain every necessary piece of information. After collecting the needed information, Statistic Package for Social Science was used to analyse the data in order to obtain descriptive statistics, and the reliability of the questionnaire was tested using Cronbach's alpha measurements (Budiasa, 2016). This study was conducted to explore the factors influencing the GDS usage in the tourism industries in Bali and it has revealed that *Perceived Ease of Use*, *Perceived Usefulness*, *Awareness*, and *Communication Channels* influence the use of GDS, whereas *Perceived Risk* were found not significant influence the use of GDS. It is also important to mention Gasson's research (2013) who dealt with the following questions: How can competitive advantage be obtained from the exploitation of new information technologies—in particular, e-commerce technologies and how has the role of travel agents changed because of the new information technologies being used to achieve competitive advantage in the air travel industry. The study concludes that technology does not have an effect on the roles of industry players, but the development of winning technologies exploits structural factors in the environment. Furthermore, the constant design of strategic information systems is vital to the creation of competitive advantage, but opportunism also plays a powerful role.

### **Data and Methodology**

The methodology applied in this research is based on the ICT readiness indicator formed by the World Economic Forum to assess the readiness of the tourism sector and its stakeholders for the implementation and application of information systems in tourism. This indicator consists of several sub-indicators (Table 1), of which the following are analyzed in the paper on the example of the Balkan countries:

- ICT use for business- to- business transactions.
- Internet use for business-to-consumer transactions.
- Fixed-broadband Internet subscriptions per 100 of population.
- Mobile-cellular telephone subscriptions per 100 of population.
- Mobile-broadband subscriptions per 100 of population.
- Quality of electricity supply.

Table 1: *Subindicators' values of ICT readiness indicator for selected Balkan countries*

	Serbia	Montenegro	North Macedonia	Slovenia	Romania	Croatia
ICT use for biz-to-biz transactions	4.8	4.7	4.2	5.1	4.6	4.6
Internet use for biz-to-consumer transactions	4.6	4.5	3.8	4.8	5.1	4.4
Fixed-broadband Internet subscriptions	21	22	19	29	24	26
Mobile-cellular telephone subscriptions	124	166	96	117.5	114	103
Mobile-broadband subscriptions	77	67	61	70	83	80
Quality of electricity supply	5.1	4.9	4.6	6.4	5.4	5.4

Source: <https://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=EOSQ365>

In order to rank the countries according to the mentioned indicator, the PROMETHEE method (Preference Ranking Organization Method for Enrichment Evaluations) was applied in the paper, which belongs to the methods for multi-criteria decision making. The application of this method in Visual PROMETHEE is characterized by three steps:

- Construction of a fuzzy relation for each criterion.
- Construction of global preference at the set.
- Order construction.

### Results and Discussion

GAIA (Graphical Analysis for Interactive Aid) is a very specific analysis within the Visual PROMETHEE program for multicriteria decision making. Namely, this analysis enables the consideration of the spatial distribution of alternatives and criteria, in the coordinate system, by quadrants and the mutual interaction of these alternatives and criteria. This analysis, mathematically speaking, is based on the concept of statistical analysis of principal components. The mentioned statistical procedure uses orthogonal transformation of a set of

potentially correlated variables into a set of values of linearly uncorrelated variables called principal components. Also, GAIA groups alternatives, and criteria, by quadrants (counterclockwise) in order to see how a certain group stands out from another. This enables easier decision-making on the choice of the optimal alternative, given that a visual representation of the relationship between the alternatives and the criteria by which they are ranked is obtained.

Slovenia and Serbia are in the first quadrant (Figure 1) and have the best distance from the coordinate origin. In this quadrant there is also the so-called "red stick of the decision" which determines the orientation of the model and indicates those alternatives that should be followed in making a decision, respecting the criteria that correspond to it. From here it can be seen that in Slovenia and Serbia all criteria are satisfactory except for the criteria of Quality of electricity and Mobile broadband subscriptions which are dominant in the fourth quadrant where are situated Croatia and Romania. Montenegro and North Macedonia are far from the coordinate origin and therefore far from the optimal solution.

Figure 1: GAIA chart for ranking countries

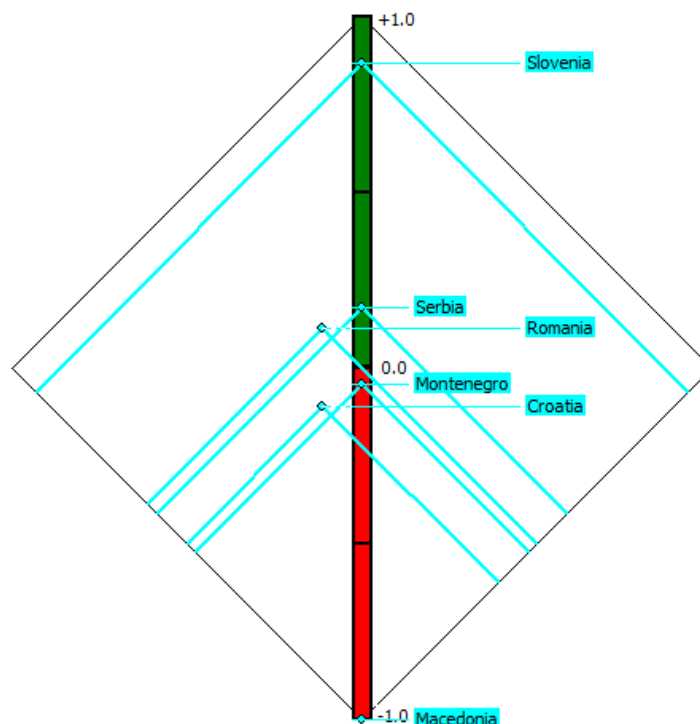


Source: Authors' calculation

The PROMETHEE diamond shows the ranking of the Balkan countries according to the ICT readiness indicator based on the value of the Phi coefficient. In diamond, ranked alternatives are marked with blue contours at an angle of 45°, so the values of the Phi coefficients for these alternatives can be easily determined to which part of the interval -1 to 1 they belong. Namely, the value of this coefficient can be from -1 to 1, and it shows the degree of connection of two or more variables or alternatives based on the dichotomy of their criteria. It is basically very similar to Pearson's correlation coefficient.

The higher the value of the coefficient Phi +, the higher the dominance of the given alternative in the total set. Given that in the case of ranking the Balkan countries according to the ICT readiness indicator, there are no overlapping contours that indicate the ranking area of each alternative individually, it means that the ranked alternatives are comparable. As the alternatives are comparable, the blue contours rank one above the other, in terms of importance, so it can be concluded that the best ranked alternative is Slovenia (Figure 2).

Figure 2: *Diamond chart for ranking countries*



Source: Authors' calculation

### Conclusion

The extensive use of computers had brought to mankind a new millennium of technology. It has influenced various aspects of life including communications, services, medicine and transport. It gives people fast data and it saves time and effort. The spread of technology has also had a great influence on the field of tourism. It lead to the creation of a computerized reservation system, also known as CRS. CRS provides agents with access to travel information such as flight availability, airfares, room rates, and car rental rates. It also issues airline tickets and it is possible to make a reservation over it.

The use of the Computerized Reservation System or CRS make the life of travel agents easier. They is no longer need of the traditional method of seeking hotel accommodations, airline tickets and other travel assistance. Widely used computer reservation systems are Sabre, Amadeus, Galileo, Abacus and Worldspan. Sabre is widely used by airlines and the travel agent community. Most of its operating functions include Reservation, Airport, Cargo, Dispatch and Crew Scheduling. Amadeus, Galileo and Abacus are mostly used by the travel agencies.

The conducted studies have shown that the use of the CRS can benefit a lot to the field of tourism. On the one hand, it improves the travel agency's efficiency and productivity, provides a lot of information aside from reservations, improves customer satisfaction, lessens operating expenses, educes human errors in quotation pricing and ticketing of net fares information, develops and nurtures the best skills in the travel agency industry, makes work load easier, connects guests to all forms of travel, etc. On the other hand, CRS can also have negative effects. Some of them are the following: replacing manpower, incurring cost for installation of software technology, investing a lot on training new staff, limiting man's capabilities due to depending more on the system, abusing the system resulting, etc.

All things considered, this program should be purchased by travel agencies in order to increase their productivity through customer service. The CRS can connect guest to all forms of travel, it can improve services, can raise booking and document preparation productivity and thus increase customer satisfaction.

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