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HOTEL AND TOURISM MANAGEMENT

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UNIVERSITY OF KRAGUJEVAC

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FACULTY OF HOTEL MANAGEMENT AND TOURISM IN VRNJAČKA BANJA

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Editorial

Менаџмент у хотелијерству и туризму – Hotel and Tourism Management is an open access peer-reviewed journal which discusses major trends and developments in a variety of topics related to the hospitality and tourism industry. The Journal publishes both theoretical and applied research papers, giving full support to collaborative research efforts taken jointly by academia and industry. According to its editorial policy goal, *Менаџмент у хотелијерству и туризму – Hotel and Tourism Management* has constantly been striving to increase its quality by promoting the popularisation of science and providing significant scientific and professional contribution to the development of hospitality and tourism industry, both in Serbia and on the global scale. The Journal is published by the Faculty of Hotel Management and Tourism in Vrnjačka Banja, University of Kragujevac. Since launching the Journal in 2013, twenty issues have been published so far.

Менаџмент у хотелијерству и туризму – Hotel and Tourism Management includes the following sections: Original Scientific Paper, Review Article, Short or Preliminary Announcement and Scientific Critique. The Journal does not consider PhD theses as prior publication and welcomes excerpts from the author's dissertations. It is published semiannually. The Journal offers an open access of its contents, which makes research results more visible to a wider international academic community. All articles are published in English and undergo a double-blind peer-review process.

The main aspects taken into consideration in paper evaluation are the originality of the study, contribution to the theory and practice and the use of grammar and style (either American or British English are accepted). The expected turn-around period is one to two months following the date of receipt. The crucial requirements for the submission of a manuscript are that the manuscript has not been published before, nor is it under consideration for publication elsewhere. The manuscript will be initially checked to ensure that it meets the scope of the Journal and its formal requirements. Submitted content will be checked for plagiarism. The provided names and email addresses will be used exclusively for the purposes stated by the Journal and will not be made available for any other purpose or to any other party.

The Journal has a reputable international editorial board comprising experts from the United States, the United Kingdom, Australia, the Russian Federation, Sweden, Spain, Italy, the United Arab Emirates, India, Poland, Finland, Argentina, Greece, Slovenia, Bulgaria, Serbia, Croatia, Montenegro.

I am glad to announce that *Менаџмент у хотелијерству и туризму – Hotel and Tourism Management* is indexed in ERIHPLUS (European Reference Index for the Humanities and the Social Sciences), CABELLS Scholarly Analytics, CEEOL (Central and Eastern European Online Library), DOAJ (Directory of Open Access Journals), ProQuest, EBSCO (EBSCO Information Services), Ulrich's Web (Ulrich's Periodicals Directory), CAB Abstract, SCIndeks (Serbian Citation Index), Scilit, CNKI (China National Knowledge Infrastructure), CyberLeninka, WorldCat and Google Scholar databases.

I would like to use this opportunity to express my deep gratitude to the authors, reviewers, and members of the Editorial Board for their devoted time and efforts that have contributed to the development of our Journal. At the end, I am pleased to invite you to look into the latest research in the fields of hospitality and tourism presented in the current issue.

Editor in Chief
prof. Drago Cvijanović

CONTENT

Original Scientific Paper

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Air transport accessibility in business tourism destinations in the COVID-19 pandemic – A Central and Eastern Europe perspective

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Abstract: The purpose of this article is to examine the role and indicate the changes caused by the pandemic in the differentiation of the level of air transport accessibility for meetings in selected countries of Central and Eastern Europe. Using a network analysis of air connections between the selected largest airports in Central and Eastern Europe (over 1 million passengers), the accessibility of the most important cities in the meetings industry was investigated. The research is based on data sources (Eurostat, Scyscanner.com, International Congress and Convention Association – ICCA reports) in pre- and post-COVID times. The analysis is based on seven cities that host the largest number of association meetings. The study identifies three key observations: slow recovery of lost organizational powers, qualitative changes in the processes of meetings organisation, which is connected with the third conclusion – the dominant position of Warsaw as a regional hub for meeting participants in this part of Europe.

Keywords: meeting industry, MICE, air transport, air accessibility, COVID-19 pandemic
JEL classification: L93, R41, Z32

Pristupačnost vazdušnog saobraćaja u destinacijama poslovnog turizma tokom pandemije COVID-19 – Perspektiva Centralne i Istočne Evrope

Sažetak: Ovaj rad ima za cilj da ispita ulogu i ukaže na promene izazvane pandemijom COVID-19 u razlikovanju nivoa dostupnosti vazdušnog saobraćaja za kongresni turizam u odabranim zemljama Centralne i Istočne Evrope. Koristeći mrežnu analizu vazdušnih veza između odabranih najvećih aerodroma u Centralnoj i Istočnoj Evropi (preko 1 milion putnika), ispitana je dostupnost najvažnijih gradova u industriji sastanaka. Istraživanje je zasnovano na izvorima podataka (Eurostat, Sciscanner.com, International Congress and Convention Association – ICCA izveštaji) u vremenu pre i posle pandemije. Analiza je zasnovana na sedam gradova koji su domaćini najvećem broju sastanaka udruženja. Studija

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identifikuje tri ključna zapažanja: spor oporavak izgubljenih organizacionih moći, kvalitativne promene u procesu organizovanja sastanaka, što je povezano sa trećim zaključkom – dominantnom pozicijom Varšave kao regionalnog centra za učesnike sastanaka u ovom delu Evrope.

Ključne reči: kongresni turizam, MICE, vazdušni transport, vazdušna pristupačnost, pandemija COVID-19
JEL klasifikacija: L93, R41, Z32

1. Introduction

Tourism would practically not exist without transport, which results in a close connection of these services with the market offer of hotel, restaurants, tourism attractions, etc. (Lohmann & Duval, 2015; Papatheodorou, 2021; Spasojevic et al., 2018). These industries have always stimulated mutual development (Spasojevic et al., 2018). Transport, especially air transport, has a great impact on the tourism destinations economy (Efthymiou et al., 2016; Henderson, 2009; Njoya et al., 2020; Ripoll-Zarraga & Raya, 2020), while tourism implies the development of new connections to new destinations, development of transport infrastructure, and the emergence of new carriers (Koo et al., 2013, Lohmann & Duval, 2014). Along with the types of tourism, the forms of travel and types of transportation means also change. However, it is an indisputable fact that the role of air transport increases with distance. Over a half of international tourists (58%) traveled by air (ATAG, 2022). This type of transport becomes even more important in the case of business travelers. The best proof of this is the fact that in March 2022 business flight bookings exceeded 2019 levels for the first time since the start of the pandemic (MasterCard Economics Institute, 2022). It is therefore the only group of travelers that has so far returned to the sizes recorded in pre-COVID times.

However, it should be emphasized that business tourists, especially those traveling to participate in all kinds of organized business meetings (congresses, conferences, fairs, exhibitions, and others) need frequent (time-flexible) direct flights to cities hosting the meetings. The frequency of connections, the network of connections, and the location of airports are key elements determining the air accessibility of cities, which is an important component of a city's potential for meeting industry (Borodako & Rudnicki, 2014). Thus, these factors become one of the strategic measures to boost air transport development (Marques & Pinho, 2021), as the basic criteria for selecting venues hosting events and increasing their competitiveness in the meetings industry market. Various stakeholder groups (managers, policymakers, service providers) are particularly interested in acquiring association meetings, since the positive impact of this type of tourism industry on the local economies of the host regions is multiplied (Borodako et al., 2019, 2021). It is estimated that the expenses of business tourists in places of stay are at least 50% higher than, for example, those of leisure tourists, at the same time accounting for 75% of an airline's revenues (Brock, 2022).

The continuous global development of both the aviation industry and the meetings industry has abruptly stopped as a result of the outbreak of the COVID-19 pandemic. The overall losses for the economy, including tourism, are extremely difficult to estimate. UNWTO (2022) estimates that only in 2021 there were 1 billion fewer international tourist arrivals and noted loss of US$ 1.0 trillion in total export revenues from international tourism. The pandemic and the lockdowns announced in its wake caused unprecedented effects widely described in the scientific literature and reports on the economies of countries around the world (Aburumman, 2020; Disimulacion, 2020; ICCA 2021; Rwigema et al., 2020). It led to the complete and temporary closure of many industries, especially the tourism and air transport industries. Despite this, the pandemic is also perceived as an opportunity for a reset (Nepal, 2020), verifying previous actions, strategic assumptions, and the way entire industries function. In this context, the analysis of the transport accessibility of the cities hosting association meetings to return to normality as soon as possible becomes important.

Although the issues of transport and tourism are closely related and widely studied in the literature, there is a need for a deeper analysis from the perspective of the different levels of transport accessibility of selected destinations and their impact on the development of individual forms of tourism, especially in the face of the crisis caused by the COVID-19 pandemic. This study investigates these issues.

The main objective of this research is to examine the role and indicate the changes caused by the pandemic in the differentiation of the level of air accessibility for business tourism (meetings industry) in selected countries of Central and Eastern Europe. The research objective was based on the following research questions:

- Which destinations in Central and Eastern Europe have the greatest potential for the meetings industry?
- How did the pandemic affect the meetings industry and the position of individual destinations hosting the largest number of association meetings?
- Which destinations in Central and Eastern Europe are characterized by the largest number of air connections with other cities analysed, determining the air transport accessibility?
- Which destinations in Central and Eastern Europe have rebuilt their connection networks the fastest in the period of post-COVID, creating conditions for rebuilding the potential of the meetings industry in selected regions?

On the one hand, the realization of the main goal requires analysing data on the meetings industry to identify leading destinations hosting the largest number of association meetings (based on International Congress and Convention Association – ICCA reports). On the other hand, it is necessary to analyse air connections between these locations to determine the level of their transport accessibility (regarding air accessibility - based on Eurostat data and the authors’ analysis using the Skyscanner meta engine). This analysis of connections for locations from different countries could show the possibilities for potential meeting participants to easily attend the event by air. To achieve the main objective, a network analysis was used between seven selected cities with airports serving more than 1 million passengers per year (in 2017) from 6 countries of Central and Eastern Europe (the Czech Republic, Estonia, Hungary, Lithuania, Poland, and Slovenia). This duality of the conducted analysis additionally takes into account the changes that have taken place in the meetings and air connections industry caused by the COVID-19 pandemic. Despite the popularity of the topic of the consequences of COVID-19 for tourism, there was a lack of sufficient empirical research linking the issues of air accessibility and the potential of the meeting industry from a regional point of view. This article attempts to fill this gap.

The present paper consists of a literature review, including a discussion devoted to issues of air accessibility and the meeting industry, followed by the research methodology and analysis of the results. Subsequently, these results are discussed leading to specific conclusions which have consequences and implications for different groups of stakeholders. In the final part, information concerning the limitations of these analyses is highlighted, and further research directions in this area suggested.

2. Theoretical background

2.1. The importance of transport accessibility in the area of air transport for the meeting industry

The importance of air accessibility is a key factor and prerequisite for the development of the meeting industry. It gains in importance, especially in the case of destinations aspiring to become the most recognisable and competitive tourist centres that host the association meetings (Marques & Pinho, 2021). One can even notice a kind of polarization of cities due to their transport accessibility. Cities with a high degree of connectivity develop, while those with a low level of accessibility stagnate (Henderson, 2009; Njoya et al., 2020).

In recent decades, many studies have been devoted to the issue of air transport accessibility, representing several different approaches in its measurement: the distance approach, the gravity approach, the cumulative opportunity approach, and the space-time approach (Geurs & van Wee, 2004). Accessibility is a complex category, since it is related to and determined by many different social, economic, technological, and environmental factors (Geurs & Ritsema van Eck, 2001; Toth & David, 2010). Therefore, measurements of air accessibility of regions characterised by high activity of the meetings industry should take into account various variables, considered both from the perspective of the transport and tourism industries.

Air transport and tourism, including the meetings industry (business tourism), are subject to strong cyclical changes (e.g. seasonality of demand) and are very sensitive to changes in the economic, social, and political environment. There are numerous links between these industries characterised by non-linearity and bidirectional causality (Brugnoli et al., 2018; Poulaki et al., 2020). The improvement in accessibility as a result of the expansion of airport infrastructure and the development of the network of connections causes the development of tourism in a given destination by reducing financial and time costs for travellers (Koo & Papatheodorou, 2017). There is also a feedback effect in these relationships: an appropriate scale of tourism development is a signal for potential investors and other stakeholders to fully use the potential of a given destination, which in turn further enhances the increase in tourism demand (Papatheodorou, 2021). At the same time, in the event of a crisis situation, such as a pandemic, one industry directly affects the other, deepening the downward trend.

The analysis for the last full statistical year, i.e. 2021, show that COVID-19 caused huge losses to the aviation industry. In 2021, there was still a 50% drop in the number of passengers compared to 2019, followed by over 54% and 45% drop in airport and airline revenues, respectively, and 21% reduction in aviation jobs (ATAG, 2021). Recent UNWTO reports estimate 172% rise in international tourist arrivals from January to July 2022 compared to the same period of 2021, which means that the aviation industry recovered by almost 60% of pre-pandemic levels. Europe showed one of the fastest recoveries in January-July 2022, with arrivals reaching 74% of 2019 level (UNWTO, 2022). Although a gradual return to normality is observed within the industry, these increases are slower (shifted in time).

From the perspective of the meetings industry, the pandemic has exposed and highlighted the need for better stakeholder management at the destination level (UNWTO, 2020). This governance should include a more effective dialogue between destination managers, meeting industry stakeholders and air transport companies to support joint development (Lohmann & Vianna, 2016; Spasojevic et al., 2019). Given interdependencies, the important factor contributing to the effective development and return of industries to the results recorded before the pandemic is such cooperation at the level of a given destination.

2.2. The condition of the meetings industry in post-COVID: Future directions of activities in the area of air accessibility for Central and Eastern Europe

On a global scale, one of the most important organisers of conferences, congresses, and training events are international industry associations and international organisations (Jo et al., 2019). The role of these entities in generating prestigious events is monitored by two organisations: the Union of International Associations (UIA) and the International Congress and Convention Association (ICCA). Every year, they publish reports, i.e., the UIA International Meetings Statistics Report and the ICCA Statistic Report and rankings of countries and cities that organise international conferences and congresses. Both lists affect the recognition, reputation, and image of the organising cities and the decision-making process of association decision-makers who make key decisions regarding the location of their annual conference and congress meetings.

Until March 2020, conference and congress tourism and the broadly understood meetings industry were one of the key service activities of world tourism (Alananzeh et al., 2019; Bueno et al., 2020), generating approximately 21.5% of total tourism receipts (WTTC, 2019) and year by year, it was characterised by dynamic growth (UNWTO, 2017; 2022). The COVID-19 pandemic has abruptly stopped this growth and severely affected the meeting industry on a global scale. ICCA published data showing that up to 94% of international meetings in 2020 were affected by the pandemic. Some of these events were cancelled, and more than 64% were held in virtual or hybrid form (ICCA, 2021).

Therefore, the pandemic contributed to the qualitative transformation of the meeting industry. The effects of technological progress, adopted out of necessity during the period of lockdowns and restrictions, will remain in this industry for a long time, smoothly introducing it into the fourth industrial revolution. This combination of technologies in the multistage process of organising and carrying out meetings blurs the boundaries between the physical, digital, and biological spheres, being an example of readiness to expect the unexpected. The data presented in the latest ICCA report confirm these phenomena, showing a 50% share of virtual and hybrid meetings and their double increase compared to 2020 (ICCA, 2021). At the same time, it is worth mentioning that on a global scale Europe holds a market share of 80% in the top 20 cities that host association meetings (ICCA, 2021).

On a global scale, however, the research conducted by UIA shows that the need to meet and exchange scientific and research experiences is still very strong among members of industry associations, i.e. the main clients of international congress events. This is confirmed, for example, by the “Survey on International Meeting Issues – 2020” conducted by the UIA (2020). Therefore, reactivating the meeting industry after the pandemic and returning to the numbers recorded before 2020 is becoming a priority for people responsible for managing tourist destinations. The meetings industry has a direct impact on the wealth of host cities and their inhabitants through the so-called multiplier effect generated based on organised events (Rogerson, 2015). The prestige of the congress city also attracts new investments and the development of highly specialised services (Marais et al., 2017).

The challenges posed by the pandemic are a prerequisite for development and require the participation of many stakeholders. The activities of entities responsible for transport accessibility in the area of air connections are one of the key conditions that enable the redevelopment of destination that host association meetings (Duval & Schiff, 2011; Graham & Dobruszkes, 2019; Hazledine & Collins, 2011; Ivanova, 2017; Koo et al., 2013). It should focus on re-examining the needs of business travellers (Tuan et al., 2019), the potential of individual destinations, developing the necessary infrastructure (Martín-Cejas, 2010), and then recreating the network of connections (Halpern & Graham, 2015; 2016) within the same time ensuring full-service capabilities. These activities should be strategically planned, coherent, and properly coordinated to bring the desired effects (Lohmann & Vianna, 2016; Spasojevic et al., 2019; Vlassi & Papatheodorou, 2021).

3. Materials and methods

The selection of the research sample covering Central-East European (CEE) cities resulted from the purpose of the study, i.e. examining the role and indicating the changes caused by the pandemic in the differentiation of the level of air accessibility for business tourism (meetings industry) in selected countries of Central and Eastern Europe. For this reason, cities from CEE were selected for the study, which in the latest ICCA 2021 report were included in the Top 50 cities in the world and their airports served over 1 million passengers. This limited the number of cities under study to 7 (Table 1). The ICCA (2021) ranking was created based on six types of meetings (planned, unaffected, virtual, hybrid, digitalisation, and business continuation), while in order to present the number of meetings in this study, only the number of planned events was assumed in Table 1 (which, according to the authors, it is best illustrated by the differentiation between cities).

Table 1: CEE cities from the Top 50 cities, ICCA 2021 Ranking (including *planned* meetings only)

Position in the ICCA Ranking	**City**	**Country**	**Number of meetings (planned)**
7	Prague	Czech Republic	95
12	Budapest	Hungary	57
24	Warsaw	Poland	49
33	Vilnius	Lithuania	38
35	Krakow	Poland	45
37	Tallin	Estonia	33
45	Ljubljana	Slovenia	39

Source: ICCA, 2021

The research on the air accessibility of selected business tourism destinations was based on three reliable and up-to-date data sources. The first is Eurostat data on air transport, related exactly to the number of passengers handled by the airports in Central and Eastern Europe selected for the study (2017-2022 Q1 + Q2). The second source of data (on the exact number of direct connections between the pairs of the cities studied) was the www.skyscanner.com airline service. This site is currently a metasearch engine and travel agency available in over 30 languages and is used by over 100 million users per month. The third source of data is annual ICCA reports (except for the year of the pandemic outbreak in 2020), which provide a globally recognised source of knowledge about the meetings market.

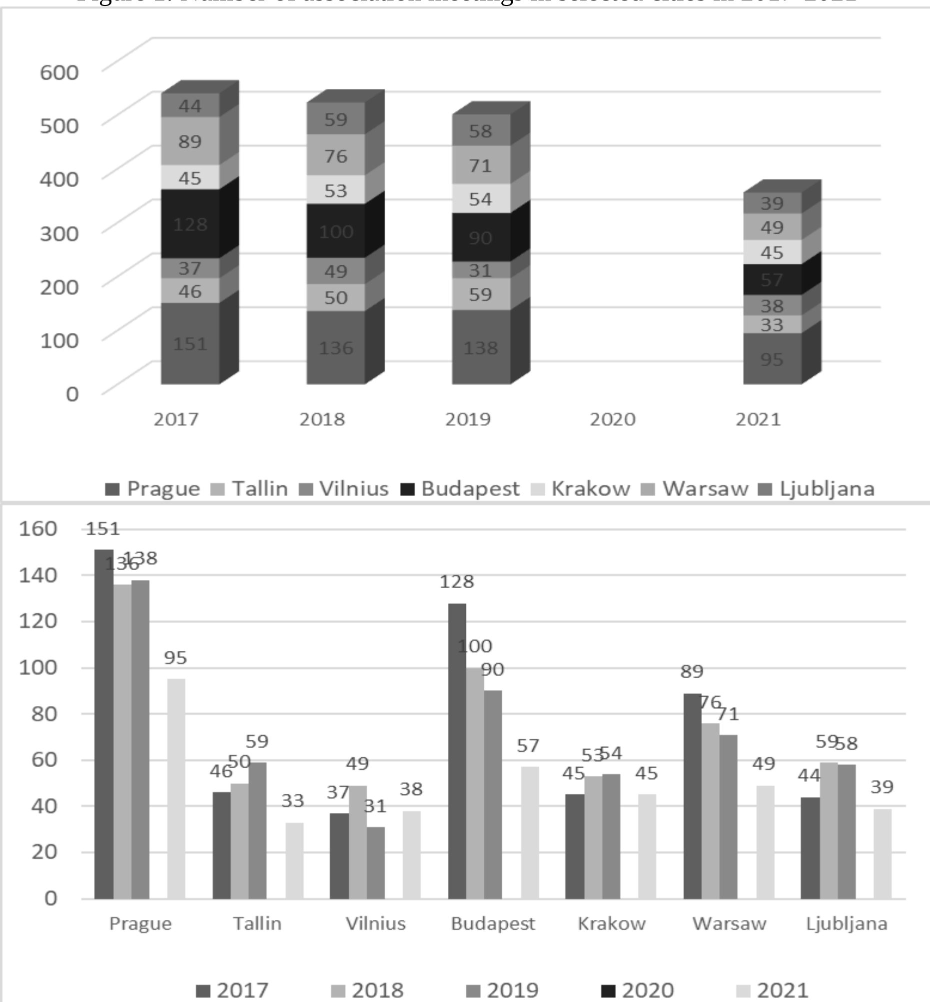
The methodology for collecting airport data consisted of three stages. In the first stage, the number of direct connections for each city pair (7x6) for seven days of the week was checked on the above-mentioned website (the date of a potential travel between November 7 and 13, 2022 was adopted in the study). Thus, the number of connections was obtained for a total of 7x6x7 (= 294) travel combinations. In this way, the risk of inaccurate data resulting from a connection network based on one or two days of travel between cities per week is reduced. In the second stage, the collected data for a full week was summed up for each pair of cities (the number of trips from city A to city B and from city B to city A was counted separately). Aggregated data formed a matrix of the total number of connections between the examined cities. In the last step of the analysis with the use of the Gephi program, a network of connections between the cities was created, adding additional information in the edit mode, i.e. the number of planned meetings in each city.

4. Results and discussion

4.1. Analysis of changes in the two sectors most affected by the pandemic - aviation and tourism

The analysis of air accessibility related to the service of business tourism was started by indicating the changes caused by the pandemic in both areas of the economy - the organisation of association meetings (business tourism) and air transport. Based on the adopted research methodology, seven cities hosting the largest number of association meetings were analysed, and changes in this industry were analysed based on these data. The data provided annually by the world association ICCA point to three key observations.

Figure 1: Number of association meetings in selected cities in 2017-2021

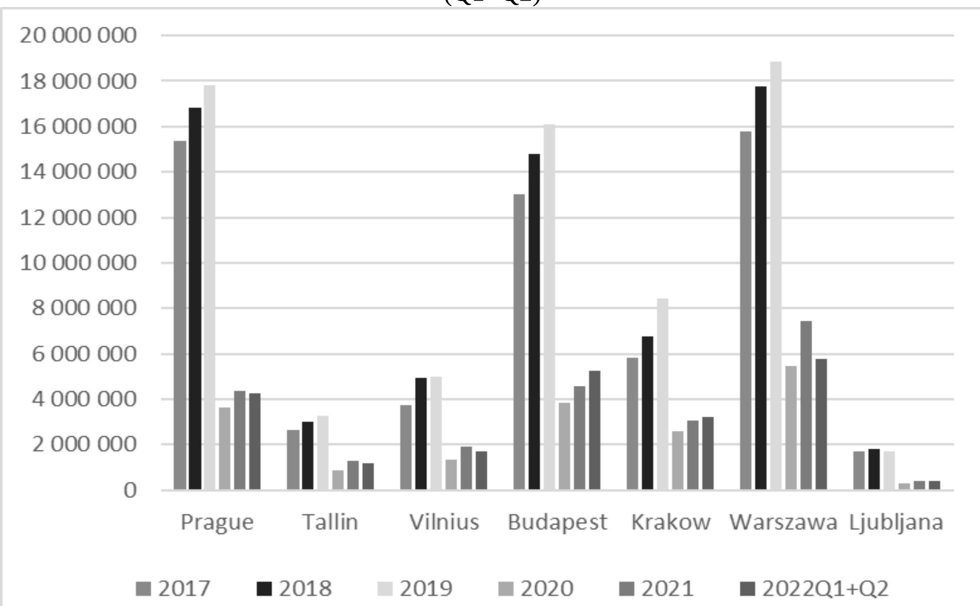


Source: Authors' research based on the data of ICCA annual reports (ICCA, 2017; 2018; 2019; 2021)

The first is the alarmingly declining total number of events organised in 2017-2019, which may be caused, on the one hand, by the growing role of other European cities, as well as global competition from Asian cities. The second phenomenon is the total absence of the number of events for the year of the outbreak of the pandemic when the entire industry in 2020 was closed worldwide and association events were cancelled or carried forward to the following years (Figure 1). We can notice that some destinations (like Vilnius) had better performance after the first years of crises, which can have many reasons - one of them can be the fact of shorter preparation time for hybrid events or the shifted events from 2020. The huge crisis that the event organisation industry is still going through is evidenced by the third phenomenon of the slow resurgence of association meetings in the world in 2021. The lack of data for 2022 does not make it possible to confirm, based on data, a further recovery of the industry, but monthly data from some markets unanimously indicate a strong revival of the industry in the analysed area of Central and Eastern Europe.

Changes in the aviation industry also indicate a very strong impact of the pandemic. Among the seven European cities studied, three capitals dominate - Prague, Budapest and Warsaw (Figure 2). Before the pandemic, in each of them, one could observe a high dynamics of the development of passenger travel from these airports. In the year of the outbreak of the pandemic, lower rates are visible for all examined cities, but at the same time a slow development of the number of passengers served. However, the figures are much lower than in the years before the pandemic. Data for the last available year (i.e. 2022) covers only the first two quarters, which, compared to the data from 2021, are also promising. In the interpretation of aviation data in the light of the organisation of international events (congresses, conferences, etc.), it should be additionally emphasised that 2022 is also the outbreak of war in Europe, which affected air traffic. Despite these two negative factors (pandemic and war), aviation data on passengers handled is getting better, which proves the revival of tourist mobility (covering various forms of tourism, but mainly business tourism from the perspective of this research paper).

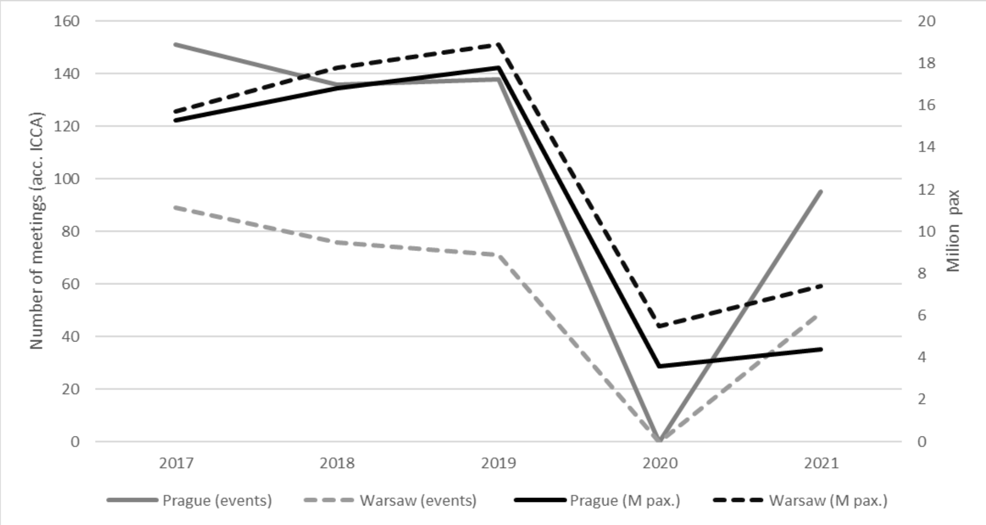
Figure 2: Number of passengers carried by the airlines in the selected airports in 2017-2022 (Q1+Q2)



Source: Authors' research based on the Eurostat data (Eurostat, 2022)

The main problem in the data analysis was the inability to obtain historical data for the network of air connections discussed in the further part of the analysis. However, an attempt to combine aviation data and organised meetings is to present changes over time in the two leading cities of the region - Prague (leader in terms of the number of meetings) and Warsaw (leader in terms of the number of passengers served). Figure 3 shows the changes using two axes (the left axis refers to the number of events (according to ICCA), while the right axis refers to the number of passengers in millions). In the case of events, Prague recorded an annual increase until 2019 – in contrast to Warsaw, which recorded fewer and fewer events at that time. Both destinations also recorded increases in 2021, while their relative position did not change (Prague was still the leader). In the case of passenger numbers, the differences were small before the pandemic, while the recovery in 2021 shows faster growth in Warsaw than in Prague.

Figure 3: Comparison of key region cities (Prague – leader in meetings and Warsaw – leader in airline connections)



Source: Authors' research based on the Eurostat data (Eurostat, 2022) and ICCA annual reports (ICCA, 2017; 2018; 2019; 2021)

4.2. Analysis of the flight connection network and the number of meetings

From the perspective of the purpose of this paper, the results of the study of air network connections between the examined seven European cities are of key importance. In this study, the period of 7 days was assumed following the methodological part of this work as regards the number of connections between the cities studied, indicating the number of connections (which is visible in the thickness of the line between the cities), and it is also supplemented by the number of events in each of these cities. The presented network analysis covers only part of Central and Eastern Europe for the cities that are key to the meetings industry (Figure 4).

When interpreting these data, the role of other large airports in Europe (such as London, Vienna, Rome, Paris, Munich, or Istanbul) should also be emphasised, which plays a key role in intercontinental travel in accessing smaller metropolitan centres. Nevertheless, the presented analysis of the network of connections between the examined cities indicates several interesting phenomena. The first observation is the dominant - central position of Warsaw offering many connections both with the northern cities (Vilnius and Tallinn), and frequent connections with Budapest and Prague. An interesting issue is the very poor network of connections from the capital of Slovenia - Ljubljana, where there are no direct connections to other cities in the region (except Warsaw). The third interesting observation is the position of Prague (dominating in the international association meetings in this region), which has frequent connections only with Warsaw in the region, and many direct connections with Budapest and Krakow (which was the only one non-capital city included in the study due to its strong position in hosting international meetings).

Figure 4: Network of direct flight connections between the cities with number of meetings in 2021 (best performing cities from East Europe according to ICCA, 2022)

Note: the line thickness illustrates the volume of direct flight traffic between cites
Source: Authors' research based on data from Skyscanner (2022) (for direct flight numbers) and ICCA (2021) (for meetings numbers), prepared by Gephi

5. Conclusion

Research of the development of air transport and the meetings industry (which are closely intertwined) indicates similarities in terms of the impact of the pandemic on these industries. In each of them, the available data confirm the slow (but stable) recovery of lost organisational powers (UNWTO, 2022). Certainly, studies of the industry literature in both industries additionally show not only positive changes in the recovery but also qualitative improvements in the provision of services. In the case of air transport, airlines drawn even greater attention to sanitary safety and non-contact service (Czerny et al., 2021), and in the case of the meetings industry – there was a dynamic development of virtual and hybrid meetings (Wu et al., 2022). Network data relating to air accessibility in the CEE region indicate the dominant position of Warsaw as a regional hub for meeting participants from the surveyed countries. According to the results, Warsaw's meeting planners should stress the powerful position of this city in bid books (offers) and use it as the strong advantage of this destination in the meetings market.

The conducted research allowed us to answer the research questions posed at the beginning. Generally speaking, in light of air transport data and hosted congress events, the three capitals of the region - Prague, Budapest, and Warsaw - have the highest potential. The second research question referred to the impact of the pandemic, which affected all cities to a similar extent, and its occurrence did not show any significant changes in the positions of individual cities – except Vilnius that recorded increased position (of course, causing huge losses in the meetings industry during the pandemic). In the sample of studied cities, Warsaw had the largest number of connections with other cities in the region (from which more than four out of each ten flights in the network were made). The dominant position of this city identified in the study was the answer to the third research question. A detailed analysis of quarterly data for the surveyed airports made it possible to identify leaders in the dynamic rebuilding of their operational potential. Comparing the data from the first quarter of 2022 and 2021, the largest increases were achieved by Budapest (1094%) and Kraków (955%). In the second quarter of both analysed years after the pandemic, the same airports were also leaders. The level of changes was slightly lower, but Budapest still led the ranking (798%), followed by Kraków (600%). However, the third place in the ranking of the airports has changed - in the first quarter - the third place was occupied by Ljubjana (686%), while in the second quarter it proved to be Prague (556%).

The conducted research also has some limitations that prevent the generalisation of the results. The first limitation in making conclusions based on the collected data is the use (by participants of meetings) of other forms of transport - mainly rail transport. In the era of striving for a zero carbon footprint generated by events, participants are encouraged to travel by rail, which in the case of participants from the analysed area seems rational in some cases. The third limitation is the deliberate resignation in this research from the main European hub airports in the study. However, the initial investigation of this aspect of the research indicated that this type of data will not have a significant impact on air accessibility for event participants. This is due to the efforts of event participants to prefer the most convenient, including the shortest (and therefore direct) air connections. Last, but not least limitation is the lack of connectivity data from the pre-COVID term, because the flight connections can be checked only about one year ahead whereas there are no available data from the past. The comparison of air connectivity of the studied cities before and after pandemic could give new insight in this topic.

Future research in the area of meetings industry and air accessibility may go in three directions. The first one could be identification of the network of air connections, distinguishing between low-cost airlines (taking into account price differences in the adopted research period) and regular airlines in context of meetings industry. The second direction of analysis may be research linking transport accessibility (including air and rail transport) with the aim of reducing the carbon footprint of large international events, mentioned earlier in this paper. Both future research avenues relate to the sustainability of the events industry, giving additional knowledge in sustainable meetings, where transportation represents over 80% carbon footprint of the mid-sized international congress. The third direction of future research could be wider context of city potential by including in the study other factors and a bigger sample of all key European cities in the meetings industry.

Conflict of interest

The authors declare no conflict of interest.

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Digital skills in tourism and hospitality as a precondition for the sector resilient growth: The case of Serbia

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Abstract: Advanced digital solutions, modern technologies and artificial intelligence have fundamentally transformed the pace of change and existing business models in the tourism and hospitality (T&H) sector. Implementing advanced digital solutions through new and improved tourism products and services can transform the customer experience while increasing the sector's productivity and resilience. However, in order to adequately leverage advanced digital technologies, the T&H sector's workforce must have a sufficient level of digital skills, competencies, and capabilities. Accordingly, this paper aims to assess the digital skills of the T&H sector employees in Serbia and identify the key factors that influence their level. The findings suggest that the digital skills of employees in the T&H sector in Serbia should be improved through formal and informal education in order for the sector to reposition itself in a more resilient and sustainable manner and in line with the 2030 Agenda.

Keywords: digital skills, workforce, tourism and hospitality, Serbia
JEL classification: Z310, L83, J240

Digitalne veštine u turizmu i ugostiteljstvu kao preduslov za rezilijentni rast sektora: Slučaj Srbije

Sažetak: Napredna digitalna rešenja, moderne tehnologije i veštačka inteligencija fundamentalno su uticali na brzinu promena i postojeće poslovne modele u turizmu i ugostiteljstvu. Primena naprednih digitalnih rešenja, kroz nove i unapređene turističke proizvode i usluge, može da transformiše korisničko iskustvo, uz povećanje produktivnosti i jačanje otpornosti sektora. Međutim, kako bi se napredne digitalne tehnologije koristile adekvatno i efektivno, zaposleni u turizmu i ugostiteljstvu moraju da poseduju adekvatan nivo digitalnih veština, kompetencija i sposobnosti. Shodno tome, rad nastoji da oceni nivo digitalnih veština zaposlenih u sektoru turizma i ugostiteljstva u Srbiji, odnosno da identifikuje faktore koji opredeljuju njihov nivo. Rezultati sugerišu da bi digitalne veštine zaposlenih trebalo da se unaprede kroz formalno i neformalno obrazovanje, kako bi se sektor repozicionirao na rezilijentnijim i održivijim osnovama i u skladu sa Agendom 2030.

Ključne reči: digitalne veštine, radna snaga, turizam i ugostiteljstvo, Srbija
JEL klasifikacija: Z310, L83, J240

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1. Introduction

The tourism business model was already changing before the pandemic, with the introduction of a range of digital solutions designed to improve the end-user experience. Post-disaster was an opportunity to re-evaluate the effectiveness of response methods and incorporate lessons learned into future planning and resilience building (Fountain & Cradock-Henry, 2020). Information and communication technology (ICT) played an important role in this process, leading Pradhan et al. (2022) to declare digital technology an indispensable component of the tourism sector. ICT has revolutionized the sector structure by removing barriers to entry, reducing costs, ensuring price transparency, and reforming and increasing the efficiency of services. In addition, recent advances in network bandwidth, search tools, and transmission capacity have had a major impact on the number of tourists using technology to book and organize their trips. Finally, modern technology has accelerated the process of sector globalization by offering providers effective tools to expand, manage, and distribute their services worldwide.

However, in order to use technology successfully and appropriately, employees in the T&H sector must acquire an appropriate level of digital skills, competencies, and capabilities. Often referred to as 21st-century skills, these abilities have an impact on how employees respond to unforeseen circumstances (Koehorst et al., 2021). According to the "Survey on European Skills and Jobs", approximately 85.0% of all jobs in the European Union require at least basic digital skills (Cedefop, 2018), while tourism organizations consider digital skills critical for the sector's success (Zaragoza-Saez et al., 2021). People employed in the tourism sector need to be able to use devices, interact, obtain information, and solve problems through various digital solutions (UNESCO, 2018). Digital skills enable employees to be more productive and efficient (Erdogan et al., 2011), i.e., to remain competitive in the challenging labour market. A workforce with above-average digital skills can help the sector streamline work, reduce costs, and increase revenue. Conversely, a lack of digital skills needed to perform certain tasks affects economic efficiency and company production, which may lead to layoffs and subsequently a decline in company morale (Banović & Pavlović, 2021). Unfortunately, the COVID-19 pandemic significantly widened the digital skills gap, particularly among T&H employees, who suffered the most during periods of full closure (Carlisle et al., 2021).

The importance of the tourism sector in Serbia can be estimated by its contribution to GDP, which has registered an average annual growth rate of 5.0% over the last decade (Lazić & Bradić-Martinović, 2022a). Considering that it acts in synergy with other sectors both directly and indirectly as a source of employment and income (OAS, n.d.), the rise of tourism in the Western Balkans has long been regarded as a driver of economic development in the entire region (Selimi et al., 2017). Moreover, the sector has strong potential to contribute to the development of rural, coastal, peripheral or underdeveloped areas. Similarly, tourism infrastructure contributes to local development, while the jobs created or maintained can help compensate for industrial or rural losses caused by the sector (Eurostat, 2022).

Since the T&H sector has been identified as a priority area for Serbia's future socioeconomic growth and development, and its further digitalization is considered a critical factor for the sector's future expansion, the assessment and evaluation of the digital skills of the T&H workforce would be crucial. Accordingly, the paper aims to assess the digital skills of the workforce of the T&H sector in Serbia and identify the key factors that influence their level.

Based on the above challenges, the following research questions were stated:

1. What is the perceived level of digital skills among tourism and hospitality employees in Serbia?

2. Which factors determine the perceived level of digital skills of employees in the tourism and hospitality sector in Serbia?

2. Theoretical background

2.1. The role of ICT in T&H and its potential for the future

Tourism was one of the first sectors to digitalize its business processes worldwide, pioneering online booking of air travel and hotels (UNWTO, n.d.). The implementation of modern ICT solutions through new and improved tourism products and services can alter the customer experience while increasing the sector's productivity and resilience (Lazić & Bradić-Martinović, 2022b; Milovanović et al., 2022), both of which play a mediating role between organizational factors and labour outcomes (Jakubiv et al., 2022). Even before the COVID-19 pandemic, ICT had transformed the pace of change and existing tourism business models (Calvaresi et al., 2021). Advanced digital solutions, modern technology, and artificial intelligence have fundamentally revolutionized the structure of the industry (Buhalis & Moldavska, 2021; Mihailović et al., 2020) by lowering barriers to entry, simplifying price comparison, restructuring distribution methods via the Internet, lowering prices, and increasing production efficiency (Assaf & Tsionas, 2018). Accordingly, tourism services have become the largest category of products and services offered online (Abou-Shouk et al., 2013).

The COVID-19 pandemic sped up the sector's digital transformation (Lazić, 2022). The 'new normal' in the hospitality industry includes the increased use of advanced digital solutions and artificial intelligence (Leung, 2019). According to Oracle (2020), 78.0% of hospitality organizations believe voice-activated gadgets for controlling room lighting and temperature will soon be commonplace. In addition, high-quality Wi-Fi, touchscreen technology, and RFID or tablet-controlled hotel rooms are some of the factors influencing digitally savvy guests' experiences (Ristova Maglovska, 2020). Similarly, mobile access to services such as hotel and airline ticket reservations and recommendations for local attractions can help policymakers increase visitor interest and generate additional tax revenue (Snow et al., 2016). It can be concluded that advanced digital technology and artificial intelligence are influencing both the industry and guest/visitor behaviour (Tuo et al., 2021).

The pandemic has revealed that customer priorities are changing and evolving, so businesses must be prepared to adapt to navigate the dynamic landscape. Fostering a culture of innovation, combined with increased use of advanced digital solutions and sustainable development, creates various opportunities for the sector's resilient growth. Therefore, the resilience of the post-pandemic recovery will largely depend on how effectively structural issues are resolved, how readily companies adopt new technologies, and the extent to which digitalization and digital skills are embraced.

2.2. The importance of digital skills for the T&H sector

Unlike other industries, the T&H sector is highly dependent on the skills, competencies, and abilities of its human capital. The European Commission report (2016) examined and identified a wide range of skill requirements for the T&H sector, including digital skills, professional and business skills, social skills, and language skills. However, demand for digital skills has skyrocketed in the post-COVID-19 environment as employment in the T&H sector has slowly but gradually rebounded and the digital connectivity of the population has increased significantly (Carlisle et al., 2021). Nowadays, digitally savvy tourists research the information they need to plan and book their trip almost entirely online (Xiang et al., 2015), which gives businesses the opportunity to be in constant interaction with their customers, track their preferences over time, and develop strong bonds and customer loyalty (Buhalis et al., 2019).

With technological advancement being the main driver of changing skill requirements in future work settings (Cedefop, 2018), Bikse et al. (2021) conclude that one of the biggest barriers to the sector's digital transformation is human capital. Innovative and high-quality customer service delivered by appropriately skilled employees is a critical requirement for the sector to succeed on stable ground. In other words, the rapid integration of ICT and tourism management has made the acquisition of appropriate digital skills in the tourism business critical to the sector's success. New skill-intensive technologies require individuals who are able to search for relevant information, justify their decisions, come up with innovative ideas, and solve problems in digital environments (Yang, 2015). In addition, the emergence of new occupations and the redefinition of existing ones require workers' digital skills to constantly evolve and improve (Hsu, 2018), making their assessment a highly popular topic in contemporary literature.

Accordingly, the concept of the digital divide, defined as the gap between those who are able to use modern digital technologies and those who are not or prefer not to (ENTELIS, 2020), has been explored in academic literature since the 1990s (Wu et al., 2014). Originally, the concept referred to accessibility to digital technologies (Van Dijk, 2006), while the modern understanding of the concept also questions the possession of skills and abilities to use modern digital solutions. Although there is ample evidence in the academic literature to support this concept in the general population, academic research on ICT in the T&H sector mostly focuses on the breakthrough growth and impact of the technology itself, as well as the importance and benefits of using ICT to manage business operations (Ivanov, 2019). Moreover, due to the lack of a clear definition, digital skills are often confused with digital literacy and competencies, which further complicates scientific research on this topic.

Recognizing the importance of strengthening digital skills in a modern information society, government agencies and training organizations have directed their research towards this topic while focusing their education and training programs on the digital skills of current and prospective workforce members. In addition, the importance of digital skills development has been recognized in most of the European Commission policy documents, as well as in the national strategic documents of the Republic of Serbia.

Although the importance of fostering digital skills in the T&H industry has been recognized as crucial for the future economic prospects of the sector, there is little scientific evidence on the level of digital skills of the workforce in the Serbian T&H sector. To the best of our knowledge, no comparable research has been conducted so far. Instead, several reports (Regional Cooperation Council, 2021; OECD, 2021a) and research papers (Bradić-Martinović & Petković, 2022; Luković, 2020) point to the high average level of digital skills among the general population in Serbia compared to other Western Balkan countries.

This paper fills the gap by providing empirical evidence on the perceived level of digital skills of T&H employees in Serbia and the factors that influence their level. The theoretical framework developed by the European Commission was used to identify the perceived level of digital skills, while the influencing factors were identified by simultaneously applying a chi-square test of independence and a binary logistic regression. As T&H has the opportunity to leverage digitalization to accelerate the sector's recovery from the 2020 collapse, the results obtained are intended to serve as a starting point for addressing skills gaps and shortages during the transition. By leveraging digitalization, the Serbian T&H sector would improve its chances of being resilient in the post COVID-19 era.

3. Research design and sample characteristics

Data collection was conducted between mid-January and early February 2023 with technical support from Microsoft Office Forms app. The link to the online questionnaire was distributed randomly by email to respondents employed in the Serbian T&H sector, with equal representation of the countries' geographical regions. The questionnaire consisted of 11 questions divided into two parts. The first part refers to the sociodemographic data of the respondents, while the second part contains questions about the self-assessment of their digital skills.

The sociodemographic distribution of the sample is presented in Table 1.

Table 1: Sample description

Socio and demographic characteristics	% of respondents N=220
Gender	
Male	52.3
Female	47.7
Age	
16-28	19.1
29-45	51,8
46-65	29.1
> 65	-
No answer	-
Education	
Primary	-
Secondary	38.2
Higher or Academic	61.8
Tourism sector	
Catering	40.9
Tourism	50.9
Creative Industries	8.2
Job position	
Management	40.4
Staff	59.6
Monthly income	
Up to 300 EUR	4.6
301-650 EUR	39.5
651-1,270 EUR	37.6
More than 1,270 EUR	11.0
No answer/Other	7.3

Source: Authors' research

4. Methodology

The Digital Skills Indicator (DSI) has been used as a conceptual framework for measuring the digital skills of employees in the T&H sector (RQ1). The European Commission developed the DSI as part of DG CONNECT – the Directorate General for Communications Networks, Content and Technology, which develops and implements policies to make Europe fit for the digital age. The European Commission's Digital Competence Framework

(DigComp) served as the theoretical basis for the indicator. The framework consists of five competence areas: Information, Communication, Content Creation, Safety and Problem-solving. Prior to Fall 2022, the DSI was calculated based on four competency domains, excluding Safety, which is the version of the indicator used in this paper[1]. For a comprehensive explanation of the methodology used for the index calculation, see "Digital Skills Indicator derived from a Eurostat survey on ICT usage by Individuals - Methodological note" (European Commission, 2015).

In addition, a two-layered methodology was used to identify the factors that determine the perceived level of digital skills of employees in the Serbian T&H sector (RQ2). In the first iteration, the Pearson chi-square test of independence (Pearson, 1900) is used to determine the presence of a statistically significant relationship between two categorical variables. Specifically, the test is used to examine the distinct impact of the sociodemographic variables on the previously calculated DSI values. By analyzing the joint frequency of the data values within a cross-tabulation, it is possible to determine the association or independence of the variables using the chi-square test. The test evaluates the compatibility of the observed distribution with an expected distribution under the assumption of independence. Consideration is given to two categorical variables with r and c categories. The null hypothesis states that no relationship exists between these variables. The p-value represents the probability of obtaining a test statistic greater than the observed value. The null hypothesis is confidently rejected if the p-value falls below the predetermined significance level.

In the second iteration, a predictive logistic regression model was built to determine which factors determine higher levels of digital skills. Specifically, a binary logistic regression (Fritz & Berger, 2015) was performed to determine which factors, when combined, increase the likelihood that an employee in the T&H sector in Serbia will have a higher level of digital skills. The Omnibus Test of Model Coefficients is used to assess whether adding independent variables to the new model improves the baseline model. The goodness of fit of the model is also tested using the Hosmer & Lemeshow test. Results are presented using the model's coefficients (B), the standard errors of the coefficients (S.E.), the Wald test of coefficients significance (Wald, Df, Sig.) and the odds ratios (Exp(B)).

5. Results

Based on the data collected during the survey, the DSI values of Serbian employees in the T&H sector were calculated to answer the first research question and are presented in Table 2. In order to estimate whether the average skill level of employees in the T&H sector is higher or lower than that of the general population, DSI values for the general population in Serbia and the European Union, whose membership Serbia aspires to attain, are also presented in Table 2.

[1] Since the data were collected as part of an online survey, it should be noted that applied method of data collection cannot provide any information about Internet use in the last three months.

Table 2: Comparative analysis of DSI levels (%)

Sample / general population of Serbia / general population of EU (2021)

Level of skills	**Serbia**		**European Union general population**
	Sample	**General population**	
Individuals with no skills	-	4.9	3.0
Individuals with low level of skills	**20.0**	25.8	35.1
Individuals with basic level of skills	**49.1**	29.0	27.5
Individuals with above basic level of skills	**30.9**	12.3	26.4

Note: The EU statistical report states that it was not possible to assess the level of digital skills of 18.9% of respondents in Serbia and 11.0% of respondents in the EU
Source: Authors' research and Eurostat Database (2021)

The sample-based analysis indicates that 49.1% of respondents have basic digital skills, while 30.9% consider their digital skills to be above the basic level. Only 20.0% of respondents reported having low digital skills. The values obtained indicate that the digital skills of respondents employed in the Serbian T&H sector are generally higher than those of the general population (both in Serbia and European Union). Nevertheless, it is important to note that the data from our sample and those collected by the Statistical Office of the Republic of Serbia and presented by Eurostat are not fully comparable due to different data collection methods. Specifically, the national statistical agency collects data using telephone surveys, while an online survey was used for data collection in this study. Consequently, it was not possible to survey people without digital skills or people who have not used the Internet in the last three months, which is the key requirement for distinguishing between people with and without digital skills. However, considering that the focus of this study is on improving digital skills to support the resilient growth and competitiveness of the T&H sector, and that only 4.9% of respondents reported a lack of such skills in the general population, it can be concluded that the method of data collection does not affect the impartiality of the conclusions drawn.

To answer the second research question, the results of a chi-square test of independence performed using the cross-tabulation of the different sociodemographic factors and the previously calculated DSI values are presented in Table 3.

Table 3: Chi-square test of independence

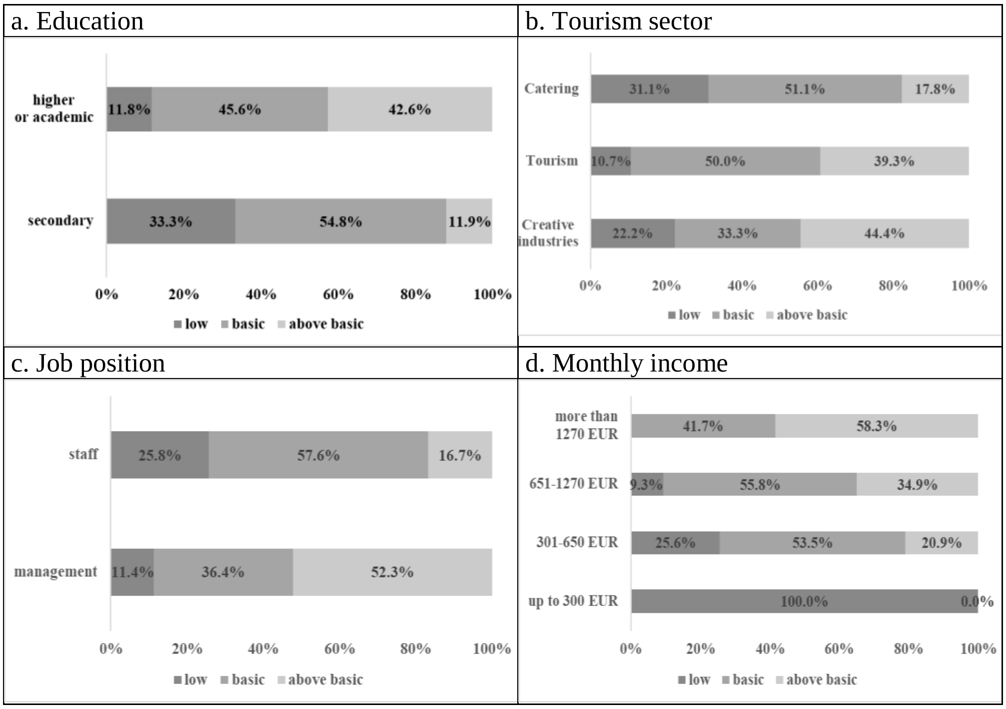
Factors	**Value**	**Df**	**Asymptotic Sig. (2-sided)**	**Phi**
Gender	3.553	2.000	0.169	0.180
Age	2.639	4.000	0.620	0.155
Education	14.423	2.000	0.001	0.362
Tourism sector	10.031	4.000	0.040	0.302
Job position	15.983	2.000	0.000	0.381
Monthly income	31.936	8.000	0.000	0.539

Note: reference values for Phi: >0.1 low level, 0.1-0.5 moderate level and >0.5 high level ($p<0.05$)
Source: Authors' research

The results indicate a statistically significant relationship between the DSI value and the following factors: 'education', 'tourism sector', 'job position' and 'monthly income'. In contrast, the results show no significant correlation for 'age' and 'gender'. The Phi coefficient is calculated as a complementary correlation metric. This statistic serves as an indicator of the strength of the relationship between the variables. Its values indicate a strong correlation between 'monthly income' and DSI level, while the intensity of the relationship between 'education', 'tourism sector' and 'job position' is moderate.

In addition, a cross-tabulation analysis was performed to improve the understanding of the relationship between variables. The graphical representation of the results is shown in Figure 1, which is divided into four subfigures. Each subfigure contains graphs corresponding to socio-demographic factors that have statistically significant relationships with DSI levels.

Figure 1: Frequency distribution for cross tabulation between DSI and socio-demographic variables



Source: Authors' research

As shown in Figure 1.a, respondents with higher or academic education have higher than average (above-basic) levels of DSI at 42.6%, while only 11.9% of respondents with secondary education have similar levels of digital skills. The correlation between the level of digital skills and the tourism sector is also noteworthy, as the data in Figure 1.b show. According to the structure presented, individuals in the creative industry have the most advanced skills, while those in the hospitality sector have the lowest. Cross-tabulation made it possible to determine the correlation between job position and DSI level. The results show that a greater proportion of those in managerial positions have advanced skills, while only 16.7% of those in lower positions do. The data presented in Figure 1.d also indicates a positive correlation between monthly income and digital skills. In particular, lower-income individuals tend to have lower levels of DSI, while higher-income individuals tend to have higher levels of DSI. Notably, none of the highest income respondents reported low levels of digital skills.

As explained in the methodology, binary logistic regression was performed in the second iteration to comprehensively answer the second research question by assessing the influence of the combined socio-demographic factors. To achieve the stated objective, the socio-demographic variables listed in Table 1 were used as predictors, resulting in a total of six independent variables, while the dependent variable was represented by the calculated values of the DSI indicator. The variable selection technique used for this purpose is Forward Stepwise using the Wald criterion. Variable selection was performed through two iterations of the algorithm, as shown in Table 4.

Table 4: Omnibus test of model coefficients

		Chi-square	**df**	**Sig.**
Step 1	Step	15.662	1	.000
	Block	15.662	1	.000
	Model	15.662	1	.000
Step 2	Step	4.284	1	.038
	Block	19.945	2	.000
	Model	19.945	2	.000

Source: Authors' research

Table 5 shows the metrics for model fit. The explanatory power of the model, as measured by the Nagelkerke R-squared, covers 23.4% of the variance in the dependent variable (Table 5). In addition, the model correctly classifies 70.0% of the cases (Table 6).

Table 5: Model summary

Step	**-2 Log likelihood**	**Cox & Snell R-squared**	**Nagelkerke R-squared**
1	120.380[a]	0.133	0.187
2	116.096[b]	0.166	0.234

Source: Authors' research

Table 6: Classification table

Step 1	Overall Percentage (%)	70.9
Step 2	Overall Percentage (%)	70.0

Source: Authors' research

The Hosmer-Lemeshow statistic is used to evaluate the goodness of fit of a logistic regression model. If the significance value is less than 0.05, it indicates a poor fit. However, in the case of this study, the model fits the data well (Table 7), indicating that there is no significant difference between the observed and predicted outcomes.

Table 7: Hosmer and Lemeshow test

Step	**Chi-square**	**df**	**Sig.**
1	0.000	0	
2	4.041	2	0.133

Source: Authors' research

Table 8 shows the variables that were selected for the final model. Statistical analysis revealed that only two independent variables, 'education' and 'job position', had a statistically significant impact on the level of digital skills. The results suggest that the higher the level of education, the higher the likelihood of having digital skills beyond the basic level. Similarly, career advancement within the organizational structure increases the likelihood that the respondent has above-basic digital skills.

The variable ‘job position’ is the most robust predictor of the responses given by the respondents. The results show that individuals who hold managerial positions are 3.6 times more likely than staff members to report having digital skills beyond the basic level, holding all other factors constant in the model. Therefore, individuals who hold managerial positions are more likely to make a valuable contribution to improving the resilience of the tourism industry in Serbia in the coming period. The data also show that individuals with higher levels of education are 3.2 times more likely to have above-basic digital skills than those with lower levels of education. Finally, the results of the study indicate that there is no significant influence of ‘gender’, ‘age’, ‘tourism sector’ and ‘monthly income’ on the level of digital skills of the respondents.

Table 8: Variables in the equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Job position	1.700	0.447	14.443	1	0.000	5.476
	Constant	-1.609	0.330	23.744	1	0.000	0.200
Step 2[b]	Education	1.158	0.582	3.964	1	0.046	3.183
	Job position	1.278	0.484	7.080	1	0.008	3.621
	Constant	-4.544	1.566	8.421	1	0.004	0.011

Note: Education (0 – secondary; 1 – higher or academic); Job position (0 – staff; 1 – management)

Source: Authors’ research

6. Discussion

Based on the analysis of the sample of employees in the T&H sector in Serbia, it can be concluded that almost half of the respondents reported having a basic level of digital skills. As mentioned above, Cedefop (2020) indicated that more than 85.0% of jobs, regardless of the sector (including tourism), require at least basic digital skills. The same source indicates that this level is sufficient for performing routine work and tasks that do not require interaction with other people. However, employees in the T&H industry who perform more complex tasks (usually in managerial positions) are expected to have higher digital skills. Considering that most respondents in the observed sample are in managerial positions (59.6%), it can be concluded that the general level of digital skills is relatively satisfactory.

The situation is somewhat different for advanced digital skills, considering that 29.1% of respondents reported having above-basic digital skills. It is these skills that are in high demand when using advanced advertising and data analytics techniques, as they relate to the tourism-specific digital skills defined by the OECD (OECD, 2021b). The most prominent examples are tourism digital marketing specialists, tourism new technology and innovation specialists, tourism business development managers, and tourism information technology specialists. Consequently, the overall conclusion of the conducted research is that T&H employees in Serbia have a sufficient level of digital skills to perform basic tasks, but on average they lack advanced skills, which could be a significant limitation for the application of advanced digital solutions.

The results of the analysis related to the determinants of digital skills of individuals employed in the T&H sector show that two main factors - education and job position – emerged as the most influential. The findings underscore the importance of education in shaping individuals' digital skills and highlight the nuanced relationship between educational background and digital proficiency, which is consistent with previous research on this topic. For example, in a sample of citizens in the Twente region of the Netherlands, Van Deursen (2010), Van Deursen and Van Dijk (2008a; 2008b) and Van Deursen et al. (2011) found that education level was the most important correlating factor - the four categories of digital or Internet skills differed significantly by education level. Using data from the 2011 Oxford Internet Surveys (OxIS), Helsper and Eynon (2013) showed that education level was related to all indicators of digital skills and self-efficacy - individuals with a university degree felt more competent in all skill areas than individuals without a university degree. Hargittai (2010) demonstrated that education has such a strong effect on the level of digital skills that even the educational level of parents can explain the differences in the level of digital skills of their children, while Gui and Argentin (2011) confirmed the exact correlation and indicated that the relationship is more robust for male children. In the domestic literature, there are only a modest number of studies on this topic. However, based on microdata from the sample of the Statistical Office of the Republic of Serbia (Survey on ICT Usage in Households and by Individuals), Bradić-Martinović (2022) confirmed a significant relationship between the level of digital skills of Serbian citizens and their level of education.

Although there is a lack of empirical research directly linking digital skills to job positions, scholars have studied the impact of skills on leadership positions. In that regard, Nowacka and Rzemieniak (2022) found that digital and cognitive competences are essential for making accurate management decisions and consciously choosing leadership tactics in an organisation. In addition, Peng (2017) noted that managerial and professional positions benefit more from computer proficiency compared to other job categories. Thus, considering managerial positions as abstract occupations, Peng et al. (2018) suggest that the growing demand for abstract occupations drives up the demand for individuals with advanced levels of education, while the computerization of routine tasks lowers the demand for individuals with intermediate skill levels.

7. Conclusion

With the aim of supporting the digital transformation of the sector, the pilot research presented in this paper was developed to investigate the perceived level of digital skills of T&H employees in Serbia and to identify the key factors influencing this level. The study concludes that, on average, employees in the T&H sector have basic digital skills that enable them to perform simple and moderately complex tasks in a digital environment. These findings suggest that the perceived level of digital skills in the T&H sector is insufficient to achieve strong long-term growth and resilience. The results also show notable correlations between digital skills levels and education and job position, highlighting the importance of education in shaping individuals' digital skills. In this regard, post-COVID is an impetus for developing countries to harness the green technological revolution to boost economic growth, increase resilience to shocks, and reduce inequality. Experience from previous technological revolutions shows that early adopters can advance faster and enjoy the benefits over a longer period of time.

The Government of the Republic of Serbia is actively working to improve the digital literacy of its citizens. For example, the Regional Development Agency "Braničevo-Podunavlje" and the Regional Development Agency of Eastern Serbia (RARIS) held training on the new centralized information system for the travel and tourism industry (e-Tourist) in October and November 2021. The Vojvodina Education Center for Vocational and Work Skills Training offers a wide range of courses, including advanced courses in web programming, design and multimedia, which are highly valued in the province's tourism industry. The Republic of

Serbia is committed to improving the digital literacy of its population, as evidenced by the above initiatives, with the "Strategy for Digital Skills Development in the Republic of Serbia for the period from 2020 to 2024" (Official Gazette RS 21/2020) serving as a guiding document. However, the Serbian government should take further measures to identify and monitor various digital divides in order to develop a systematic approach to digital learning. In particular, the country should prioritize the improvement of the formal education system through its further digitalization, paying special attention to the needs of the T&H sector and collaboration with industry in curriculum design. It would be desirable if this process were guided by a deep understanding of the need for advanced skills to provide a basis for more intensive development of the T&H sector through technological advances. Moreover, it is unlikely that the development of novel digital educational materials will lead to a successful outcome. On the contrary, the first step should be to use existing resources that are also curriculum-aligned.

Studies on digital skills in the T&H sector, in general, and Serbia, in particular, are scarce. The findings in this study not only send an important signal to other researchers to address this issue, but also have practical implications for various stakeholders. Policymakers and educational institutions can use these findings to prioritize digital literacy initiatives within formal education systems aimed at equipping students with the necessary skills to meet the demands of the digital age. In addition, employers and recruiters can use these findings to inform recruitment and training strategies and design appropriate executive short programs as they recognize the importance of advanced digital skills and competencies across career fields. By recognizing the interplay between education, job position, and digital skills, decision-makers can make informed choices to promote digital inclusion and improve individuals' readiness for the evolving digital landscape.

Nonetheless, the main limitations of this study relate to the sample size and the method of data collection. The authors are aware that a more realistic insight into the actual level of digital skills of employees in the T&H sector could be obtained if the questionnaire was distributed both online and in paper form. Consequently, future research should be directed towards this goal and include a larger sample of respondents. In addition, the self-assessment method often leads to biased evaluations. However, measuring digital skills is not straightforward, and objectively determining individuals' knowledge requires testing, i.e., an experimental method that could be costly and time-consuming. Since the European Union has conducted the same self-assessment surveys of European citizens over the last fifteen years, on the basis of which the DSI is calculated, the use of the same method could be considered appropriate.

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Conflict of interest

The authors declare no conflict of interest.

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Business incubation as a tool for transforming MSMEs in the Tanzanian tourism sector

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Abstract: The failure of the majority of start-ups in the Tanzanian tourism sector is mainly due to the inadequate business incubation services in the country. Through qualitative method, this study suggests a model for establishing tourism incubation centres in Tanzania with a pilot in Arusha, Dar es Salaam and Zanzibar. An initial three-year implementation needs to be considered and it will require strong collaboration and cooperation among different stakeholders, working together to support and grow tourism MSMEs in the country. This study will guide the adaption of the business incubation approach in the tourism sector. Business incubation will contribute to a broader goal of establishing, sustaining and developing tourism MSMEs that will lead to economic prosperity in Tanzania. The study is an early wake up call for policy and decision makers to consider adapting business incubation as a tool for transforming MSMEs in the tourism sector in Tanzania.

Keywords: business incubation, MSMEs, tourism sector, Tanzania
JEL classification: L83

Poslovna inkubacija kao alat za transformaciju malih i srednjih turističkih preduzeća u Tanzaniji

Sažetak: Neuspeh većine startap turističkih preduzeća u Tanzaniji je uglavnom posledica neadekvatnih usluga poslovne inkubacije u zemlji. Ova studija primenom kvalitativne metode predlaže model za uspostavljanje turističkih inkubacionih centara u Tanzaniji sa pilotom u Aruši, Dar es Salamu i Zanzibaru. Potrebno je razmotriti početnu trogodišnju implementaciju, a to će zahtevati snažnu saradnju između različitih zainteresovanih strana, radeći zajedno na podršci i razvoju malih i srednjih turističkih preduzeća u zemlji. Ova studija prati prilagođavanje pristupa poslovne inkubacije u sektoru turizma. Poslovna inkubacija će doprineti širem cilju uspostavljanja, održavanja i razvoja malih i srednjih turističkih preduzeća što će dovesti do ekonomskog prosperiteta u Tanzaniji. Studija je poziv za buđenje svih donosioca politika i odluka da razmotre prilagođavanje poslovne inkubacije kao alata za transformaciju malih i srednjih turističkih preduzeća u Tanzaniji.

Ključne reči: poslovna inkubacija, mala i srednja preduzeća, turistička delatnost, Tanzanija
JEL klasifikacija: K10, Z30

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1. Introduction

The tourism industry is one of the main drivers of the economy in most countries, including Tanzania. In 2018/2019, the contribution of tourism was over 333 million jobs (10.3%) of all the jobs globally. Worldwide, the share of tourism in economies was over US $ 9.6 trillion (10%), while the total expenditure for inbound visitors was over US $ 1.8 trillion (6.8%) of all total exports in the period before the coronavirus (COVID-19) pandemic (Filep et al., 2022; Lim & To, 2022). According to the World Bank (2022), tourism is the backbone of Zanzibar's economy, contributing over 60,000 jobs, 27 percent of GDP, and 80 percent of the country's foreign exchange earnings. Conversely, tourism's contribution to Tanzania's mainland economy is 17.6 percent, and 25 percent of the foreign exchange earnings. Tourism offers over 1.5 million jobs in the country (MNRT, 2022).

The majority of newly established tourism businesses struggle to survive during the first few months or years of existence. Yet, the role of these young businesses in the economy of most developing nations is crucial. These businesses are a source of livelihood for many people as they provide employment opportunities to many young people. They also provide a source of revenue to the government through taxes. Further, these businesses are often the source of innovations that drive the economy (Azadnia et al., 2022; Yuan et al., 2022).

"Business incubators are entities that provide support to start-up companies, managing the obstacles faced by entrepreneurs and facilitating the hazardous process of business creation and growth" (Schiopu et al., 201, p. 474). An incubation centre provides MSMEs with a range of services needed to improve their business performance through the incubation process (Muathe & Otieno, 2022; Omar et al., 2022). These services include hands-on skills development, mentorship and other business advisory services (Sarabipour et al., 2022). An incubation centre is either a physical facility or a virtual platform that provides a set of clearly-defined support services to individuals, or small businesses, in their early stages of development, to help make the businesses grow and expand their services profitably and sustainably (Thomas & Ki, 2020). This study intends to emphasize the need for business incubation of MSMEs in the tourism industry for enhancing competitiveness of Tanzania as a tourist destination.

2. Literature review

2.1. Tourism business incubation in Tanzania

Since its independence in 1961, the tourism sector in Tanzania has been lacking key human resources, and incubation programs to drive its performance. Since the sector still lacks those human resources and incubation initiatives, the performance of the sector continues to be reduced and curtailed. Tanzania as a tourist destination may not become fully competitive if the existing conditions remain unchanged. Training institutions in the country offering a variety of training programs and qualifications include 9 Tourism Universities under the Tanzania Commission for Universities (TCU), 17 institutions under the Vocational Education Training Authority (VETA), and 37 tourism colleges under the National Council for Technical and Vocational Education and Training (NACTVET). None of these institutions offers tourism business incubation services in the country (Sanga & Anderson, 2020).

However, looking more closely at the details of the programs these institutions offer, we see there are some gaps in the curricula, including: (i) Limited capacity, especially of public tourism training institutions, in terms of scale, physical capacity, quality of programs, resources and expertise, making it difficult to admit a large number of trainees; (ii) A mismatch between training programs and industry needs, arising from a failure of communication between demand and supply sides. Training courses that are offered do not, in many cases, provide a solution to any known industry needs; (iii) Lack of training for operators and owners of tourism businesses. In the training courses that are offered, business owners and operators are rarely targeted to attend; and (iv) Lack of focus on entrepreneurship so the training offered does not equip participants with entrepreneurial skills. Other gaps in the curricula include; (v) Training on the regulation of different business activities and compliance; (vi) The main focus is on traditional tourism management; (vii) Lack of clear career guidance in tourism. Unlike other professions, no clear career path has been developed within the tourism and hospitality domain; and (viii) A perceived mismatch between the programs of public and private training providers and industry needs (Buselic & Banko, 2021; Feng & Wu, 2021). This outlook paints a picture of a sector that needs a more focused and research based approach in tourism business incubation services (Sanga & Anderson, 2020).

The majority of governments and development partners in developing countries such as Tanzania find it necessary and important to support these businesses to survive, innovate and grow. Incubation programs are part of the broad range of interventions that are designed to assist these businesses. In general, incubation centres are set up to allow start-ups to experience accelerated growth, develop a structure that helps maintain business focus, access a variety of funding sources, have the needed exposure to industry leaders and mentorship, access low-cost space and flexibility, access expensive and sophisticated equipment, develop crucial business partnerships, access professional resources, and access networking opportunities (Ayodele, 2020; Wu et al., 2020).

2.2. Experiences in incubation centres in other countries

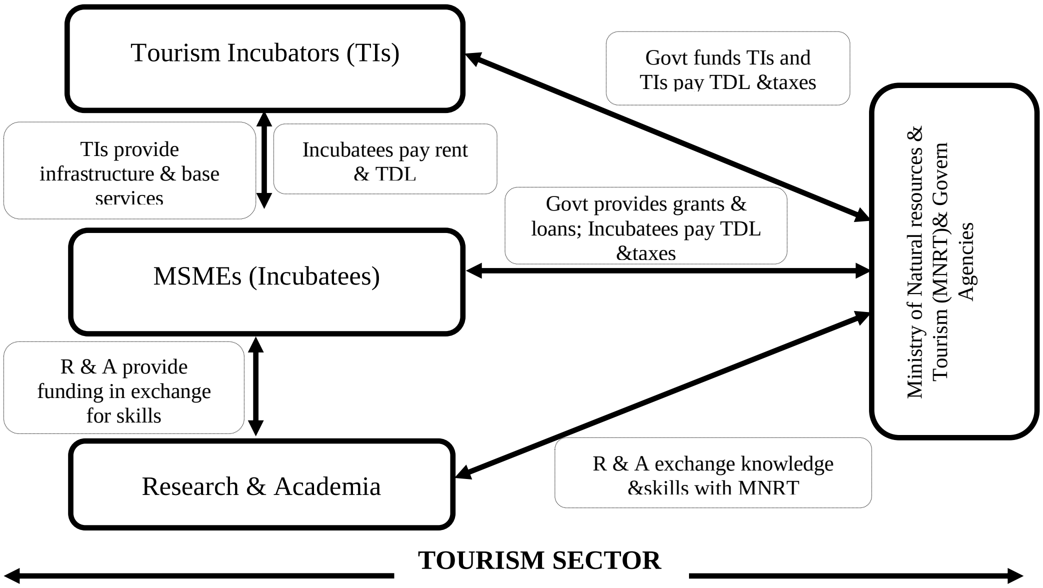
In the European Community, there is a Creative Accelerators for Sustainable Tourism initiative (CAST), which is a collaborative project that develops a network of incubators and accelerators, start-ups & SMEs, and financiers. CAST is responsible for promoting knowledge-sharing, the use of technology and collaboration across borders for sustainable tourism. Also, the organization supports the creation, business development and scaling-up of companies in the tourism sector through incubators and accelerators. CAST does all these by integrating creativity, art and design skills from Cultural and Creative Industries using cutting-edge technology, science and other relevant expertise (Klofsten et al., 2020).

Tourism Incorporated (TI) is an incubator for start-ups in the Tourism and Hospitality sector in Rwanda. It is run by Entrepreneurial Solutions Partners (ESP) in partnership with the Master Card Foundation under its 'HangaAhazaza' (Create the bright future) program. The TI aims to grow a vibrant community of youth and women business leaders in the tourism and hospitality industry. The TI program has supported many in turning their business ideas into actionable plans that can be easily implemented. It entails working with a coach and having a free co-working space, where one gets an opportunity to not only focus on their start-ups but also to collaborate with other entrepreneurs in the larger community. The TI offers access to business skills, and financing selects entrepreneurs who later receive the right mix of capacity-building, financing and mentorship to become leaders in the sector. Beyond capacity-building and access to finance, the top three entrepreneurs in this cohort receive seed funding of up to US $ 20,000 to help them build their ventures further. The TI program nurtures Rwanda's top tourism and hospitality innovators, inspiring them to embrace entrepreneurship as a career path (Molamu, 2021; Rens et al., 2021).

2.3. Theoretical framework

Figure 1.1 depicts the relationship between key tourism players that are interrelated in the tourism ecosystem in Tanzania. The researcher categorized four major stakeholders, including; the MNRT and other government institutions, tourism incubators, MSMEs (incubates), and research and academia. The MNRT, other government institutions, research and academia provide support for incubation with the hope of economic development and job creation and skills transfer and commercialization. The government provides subventions in the form of loans and grants and expects that incubates will pay the Tourism Development Levy (TDL) and other taxes after attaining maturity. On the other hand, tourism incubators pay TDL and other taxes from their revenue. The research and academia provide sponsorship and obtain a return on investment through technology transfer and commercialization.

Figure 1: Tourism incubation theoretical framework



Source: Author's research

Accordingly, incubators around the world are usually attached to research and academia or public entity or to a community-based development entity to allow government or private sector to provide initial financial resources into incubation initiatives. A key aspect of this theoretical framework is that it conceptualizes resources (revenue and skills) between key players in the tourism sector. It is important to note that tourism business incubators are considered moderators of these two key resources. Given that, the effectiveness and efficiency of any tourism business incubation are directly related to the tourism development levies and taxes that the government provides to support MSMEs in Tanzania.

3. Methodology

This was a cross-sectional study, in which data were collected from several informants in the tourism ecosystem in Tanzania. The research adopted a qualitative method, involving 112 tourism respondents who were randomly drawn from over 1,214 tourism stakeholders including the sub-sectors of accommodation, tour operations, tourism investors, travel operators, tour guiding, arts and crafts in the country. Data were collected through focus group discussions (FGDs), key informant interviews (KIIs) and field observations. Respondents were carefully recruited to involve only those who were likely to provide relevant information. The focus groups composed of similar types of informants and each group had 8-10 participants. On the other hand, KIIs involved in-depth interviews, whereby informants were interviewed one-on-one.

With regards to FGDs, a variety of voices were heard in a short time. Participants were carefully recruited to involve only those who were likely to provide relevant information. The focus groups composed of similar types of entrepreneurs and each group had 8 participants. Group participants were organized in a manner that participants sat in circles during discussions. With in-depth interviews, key informants were interviewed individually, face-to-face. One of the advantages of in-depth interviews is that participants have the undivided attention of the interviewer and subjects can be explored in more detail. The role of the researcher was only to probe as much as possible on issues in order to gather rich information.

The data gathered were processed and analyzed qualitatively; the researcher first translated and categorized them into various themes and sub-themes based on the research objectives and research questions in both FGDs and in-depth interviews guides. Data from the in-depth interviews were transcribed and analyzed using thematic data analysis. Verbatim quotes were used to illustrate points of view while preparing this report.

4. Results and discussion

Over 90 percent of tourism MSMEs in Tanzania are located in the major tourist hotspots including Arusha, Dar es Salaam and Zanzibar. This study found that the tourism sector in Tanzania is multi-faceted and holds great potential for socio-economic development. In particular, the study established that: (i) The majority of tourism MSMEs focus on accommodation, food, beverages, and transportation services; (ii) The key value chain actors combine both direct services, such as accommodation, restaurants, curios/handicrafts, conferences, etc., and indirect services like tour operators for tourists; (iii) Limited product diversification and/or differentiation: most businesses making the same offer of products to clients (tourists); (iv) Weak business connections and networking relationships, making it difficult for them to share the benefits of the industry; (v) Highly-localized operations with a greater focus on leisure tourism; (vi) Stiff competition with more established MSMEs; and (vii) Limited focus on the image, branding and online presence as a way of marketing their products.

This study has revealed that the pilot Incubation Centres in the Tanzanian context should be established in a way that their activities are implemented with easiness and success.

"We badly need centres where we could meet for sharing and exchanging business ideas regarding tourism operations in this country. The tourism business is increasingly becoming very competitive, especially as all the countries struggle to recover from the COVID-19 pandemic", said one of the representatives from the tourism associations in Tanzania in 2022.

This study has discovered that the incubation centre once established will offer a range of services which are very necessary for tourism MSMEs to start, and continue operating their tourism businesses successfully in Tanzania.

"Since I started this restaurant in September 2016, no one be it from the companies with successful tourism businesses or the government has ever come here to guide us on how best

we should conduct our businesses. The people we often see are the tax and levies collectors from the City Council and Tanzania Revenue Authority". A quote from one of the providers of food and beverages in Dar es Salaam, 2022.

In addition, this study has discovered that, after the establishment of an incubation centre, formal training sessions may be organized to equip participants with technical skills in business management issues commensurate with their existing knowledge. This study further found that the incubator beneficiaries may be assigned specific mentors or coaches in line with their business ideas and aspirations. The mentors may be successful local entrepreneurs, in the tourism industry and providers of direct tourism business support services. In addition, the study observes that the mentorship approach may help in exposing participants to business opportunities and referrals since it is expected that the mentors will provide much-needed networking opportunities and introductions. However, the study notes that the focus and magnitude of the mentorship services shall depend on the specific needs of the MSMEs within their tourism business lines.

"My business is to sell art and crafts (curio shop) which is struggling to recover from the COVID-19 pandemic, and unfortunately neither the Ministry of Tourism nor the Tourism Confederation in the country has offered to provide us with ideas on how best we should revive our businesses", said one of the Tour Operators in Arusha in 2022.

To align the incubation centres with the existing situation in the country, the pilot tourism business incubation centres are proposed to be established in Arusha, Dar es Salaam and Zanzibar. These three locations are the large business centres in Tanzania's tourism activities and will provide easy access to multiple service providers, needed facilities and infrastructure, a vibrant business community and other necessary logistics. In addition, Dar es Salaam is Tanzania's busiest city, chief commercial, most populated and industrial centre. Zanzibar is the home of beach tourism, cultural tourism, water sports, and a spicy island.

After the establishment of the incubation centres, services which will be offered include: tourism business mentorship, basic book-keeping skills, governance skills, resource mobilization skills, and monitoring and evaluation planning. The intended incubation services should be delivered in conjunction with different stakeholders and partners.

Such services will range from, coaching and mentorship, training, networking, counseling, career guidance, resource mobilization, exposure, and others depending on the context. Such services are going to be offered at different intervals and durations.

The formal training sessions shall be delivered using competency-based and experiential learning approaches. This training will be facilitated by a team of experts from the National Council for Technical and Vocational Education and Training (NACTVET) and/or Tanzania Commission for Universities (TCU) accredited learning institutions in the country. The training will consolidate participants' core tourism industry-related competencies and equip them with complementary skills, and knowledge in entrepreneurship, leadership and management, financial literacy, digitalization, marketing, communication, time management, and teamwork. The materials will be designed to foster the successful utilization of adult learning approaches such as focus group discussions, field trips, role plays, demonstrations, and problem-based learning.

Mentorship will be done based on a mentorship plan which will be created and agreed upon by the participants and the mentors with clear objectives and timelines. The participants and mentors will hold scheduled meetings. Following each mentorship session, mentors will be required to prepare a report on participants' progress and highlight issues requiring attention to reinforce the mentorship process. In addition, the study observes that the mentorship approach may help in exposing participants to business opportunities and referrals since it is expected that the mentors will provide much-needed networking opportunities and introductions.

The Centre will also scan the business environment to identify emerging tourism business opportunities and emerging entrepreneurs as a way of inspiring the participants toward these emerging opportunities.

Adding to that, this study suggests that the participants will be organized into small groups of up to ten and will be required to meet every month to share experiences, ideas, and opportunities and to network with one another. Participants will also be required to assess their progress after every meeting and report on this to the Incubation Centre management.

There shall be sessions organized to discuss issues in the tourism business, innovation, trends, and policy. Such discussions will be conducted at the Incubation Centre but will be made available on various media platforms such as radio, TV, and social media. These engagements will create room for participants to brainstorm tourism business issues, draw public attention to tourism issues, and explore available opportunities in the tourism sector.

The Incubation Centre may also organize events to foster networking. This will be done to link participants to businesses and resource opportunities in society. These activities will be designed to link participants with potential investors and companies with the necessary resources for tourism business start-up and operation. The activities will include workshops, seminars, expert dinners and special events focusing on bringing together tourism businesses, industry players, regulators, sponsors, academicians as well as public officials to interact and share insights. Furthermore, the Centre will establish an alumni forum to support the aforementioned activities. Such engagements will enable participants to develop the soft skills necessary to further their businesses.

Based on the contextual background and best practices from across the world, this study proposes an operational model as well as the associated services for the tourism MSMEs business Incubator in Tanzania. The model also takes into account the required governance structure for its success as provided in the preceding sections. Given the context, Tanzania could adopt the Tourism Incorporated (TI) model in Rwanda. In Tanzania, the Incubation Centre is meant to be solely for start-ups in the Tourism and Hospitality sector of the country. It can be hosted by one of the high-learning institutions in the country, such as the Open University of Tanzania in partnership with the Ministry of Natural Resources and Tourism. Initial funding may be obtained through government subventions, fundraising and donor support.

This tourism incubation will pursue a mixed operational model, offering both physical and virtual resources. It is advised that business development services will be provided from a physical location, which will be identified among the existing tourism training institutions, preferably universities. Trainers, mentors and advisors will travel to the designated incubation centre at regular intervals to meet participants. The tourism incubators' revenue-generated model will be based on fees and service charges. In addition, the services of the incubation centre may be accessed virtually to allow access to as many people as possible. An appropriate payment system would have to be put in place to allow access physically as well as virtually.

Incubation centres are funded in a variety of ways. Some are fully funded by the state or municipal authorities where they are located. Others are funded by international organizations with particular interests. In some cases, incubation centres are set up by university departments or corporate entities as a means of enhancing start-up success in given fields. In some cases, they are set up as purely private businesses whose revenue stream consists of the rental income as well as the fees for specific services.

5. Conclusion and recommendations

The incubation and career guidance centre are one way to support entrepreneurs, especially start-ups. If it is properly set up and managed, it will help the targeted tourism businesses to survive and grow. The success of the incubation programs will depend on the quality and relevance of the programs to the needs of the targeted businesses. This, too, requires the management of the centre to be innovative in terms of how they understand the environment and needs of local businesses and tailor the programs to address those needs. Tanzania could adopt the Tourism Incorporated (TI) model in Rwanda. It can be hosted by one of the high-learning institutions in the country in partnership with the Ministry of Natural Resources and Tourism. Initial funding may be obtained through government subventions, fundraising and donor support. The Incubation Centre in Tanzania should be exclusively meant for start-ups in the Tourism and Hospitality sector in the country.

The failure of the majority of start-ups in the tourism sector in Tanzania is due to the in adequate business incubation services in the country. This implies that the adoption of business incubation initiatives can contribute to a broader goal of establishing, sustaining and developing stronger tourism businesses that will lead to economic prosperity in Tanzania.

The study was conducted while Coronavirus (COVID-19) pandemic, especially COVID-Omicron XBB variant, was still unfolding in Tanzania and across the world. Data were mainly collected from the tourism businesses through focus group discussions (FGDs), key informant interviews (KIIs) and field observations. Tourism businesses are in constant interactions with a variety of local and international clients from all the corners of the world. Bearing that in mind, the researcher had to observe all safety and health guidance provided by the World Health Organization (WHO), and the Ministry of Health in Tanzania for protecting himself, respondents, and all the people involved in the study. The measures included observing social distance, using sanitizers, washing hands with soap before and after every interview session, and wearing masks in some instances and use of telephone interviews, especially with the KIIs, where deemed necessary. Furthermore, tourism business establishments' operators are busy throughout. Getting hold of the representatives from the selected businesses as informants for interviews in this study was a task that required professionalism for action, particularly the understanding of the tourism business ecosystem.

Given the dispersed geographic locations of the potential incubates in Tanzania, it is advisable that, as a first step, the main incubator is located where the highest concentration of potential businesses to be incubated will be found. This will also depend on whether a facility with enough space to accommodate the Centre can be identified within existing public facilities.

Further studies are needed to come up with guiding frameworks for each tourism business incubation service and other studies may aim at evaluating the performances of each incubation centre.

Conflict of interest

The author declares no conflict of interest.

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Does training and development affect employee retention in the hotel industry? The mediator role of organizational commitment

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Abstract: The capacity of hotel companies to attract and keep qualified human resources is a critical factor influencing their long-term success. This study aims to verify the effects of training and development on staff retention in hotels located in the Republic of Serbia and to determine if a high degree of organizational commitment alters the strength of the link between these constructs. Descriptive and correlational analysis, ANOVA, T-test, and the regression model for testing mediation effects were applied to a sample of 97 hotel employees. The obtained results confirmed the statistical significance of the association between training and development and employee retention, along with the mediating role of their commitment in this relationship. The study's theoretical contribution enhances knowledge of the intricate connection between training and development, employee commitment, and staff retention. Additionally, the results support hotel management in reinventing the approach for controlling employees' work attitudes through a number of pragmatic implications.

Keywords: training and development, retention, commitment, hotels, human resources
JEL classification: M12, M53, L83

Da li trening i razvoj utiču na zadržavanje zaposlenih u hotelskoj industriji? Medijatorska uloga organizacione posvećenosti

Sažetak: Održiv uspeh hotelskih preduzeća u velikoj meri je opredeljen njihovom sposobnošću da regrutuju i zadrže kvalitetne ljudske resurse. Cilj istraživanja u ovom radu je da ispita uticaj treninga i razvoja na zadržavanje zaposlenih u hotelima koji posluju na teritoriji Republike Srbije i da utvrdi da li visok nivo organizacione posvećenosti menja jačinu odnosa ovih promenljivih. Na uzorku koji broji 97 zaposlenih primenjene su deskriptivna i korelaciona analiza, ANOVA, T–test, kao i regresiona analiza za utvrđivanje medijatorskih efekata. Generisani rezultati potvrđuju statistički signifikantan uticaj treninga i razvoja na zadržavanje zaposlenih i medijatorski efekat njihove posvećenosti u prethodno navedenoj relaciji. Sa stanovišta teorijskog doprinosa sprovedeno istraživanje produbljuje

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razumevanje kompleksnih odnosa treninga i razvoja, retencije zaposlenih i njihove privrežnosti hotelu. Dodatno, kroz izvesne pragmatične implikacije, rad pruža podršku menadžmentu hotelskih preduzeća u redefinisanju strategije upravljanja radnim stavovima zaposlenih.

Ključne reči: trening i razvoj, zadržavanje zaposlenih, posvećenost, hotelijerstvo, ljudski resursi
JEL klasifikacija: M12, M53, L83

1. Introduction

As the employer market became more competitive, hotels faced new challenges in human resource management (HRM). Ensuring necessary employee commitment and long-term staff retention is one of the primary responsibilities of the hotel's top executives. In this regard, they are expected to identify the most prevalent causes of employee turnover before creating and establishing effective measures to retain a high–quality workforce. Employee training and development in this context deserves significant attention since it is regarded as a possible staff retention strategy. Along with low wages and insufficient work-life balance, the absence of training and development programs has proven to be a common factor for employees leaving hotel companies (Mohanty & Mohanty, 2020). In this sense, effective training and development activities and their successful implementation can support the enhancement of positive working attitudes among hotel staff.

Employees will seek possibilities for advancement in other organizations if their present company does not offer them the opportunities for training and development that they expect based on the application of information and skills gained through training (Upadhyaya & Ayari, 2019). New algorithms for human resource development in the hotel industry are rooted in rising expectations of potential employees about maximizing particular knowledge and abilities, as well as career opportunities (Kordić & Milićević, 2018). Employee training and development is an important aspect of employer branding, a complex approach used to recruit top-quality candidates from the labor market (Slavković & Slavković, 2019), generate satisfaction (Tanwar & Prasad, 2016), commitment (Sharma et al., 2018), and retention (Ul Hadi & Ahmed, 2018). According to the results of previous research, the development value of the employer brand, which in meaning and content corresponds to training and development is negatively correlated with the intention to leave (Ahmad & Daud, 2016). Such value enhances employee retention by improving job satisfaction and commitment (Syal, 2021). However, one of the intended outcomes of implementing diverse training and development programs is organizational commitment. This concept's tight relationship with training and development, on the one hand, and employee retention, on the other, was the impetus for exploring its possible mediating effect in the applied research model.

This paper aims to identify the training and development impact on employee retention in hotels operating in the Republic of Serbia. The research subject also involves organizational commitment as a possible mediator in the aforementioned relations. In this regard, the purpose of this study is to explore the interconnection of these variables and to determine whether a high level of organizational commitment changes the strength of the relationship between training and development and employee retention. Although several studies demonstrate the direct effect of training and development on staff retention in the hotel sector, no study, to the best authors' knowledge, has looked into the intermediary function of commitment in this relationship. As a result, the goal of this study is also to overcome identified research gap by determining the mechanism through which training and development affects employee retention in hotels. Furthermore, research on staff retention antecedents in the hotel industry is particularly scarce in the domestic literature. The paper is divided into six logically related sections. Following the Introduction, there is a literature background with the research conceptual framework. The third section covers the methodology used and the structure of the examined sample, while the fourth part presents the empirical study findings. The results are discussed in the fifth part. Finally, the paper is framed with the main conclusions and implications followed by the study's limitations and future research proposals.

2. Background

Employee training and development is one of the vital functions in HRM, with the primary goal of providing the organization with an appropriate strategic response to the growing demands of the volatile business environment. The advantages of instituting training and development programs are multiple, and they have a significant impact on guest relationship management. However, training programs and management support in its implementation affect the quality of hotel service (Dhar, 2015; Waqanimaravu & Arasanmi, 2020), whereas the perception of high service quality most often leads to the formation of positive consumer attitudes (Radosavljević et al., 2018) and their retention (Alketbi et al., 2020). At the same time, the possibilities for employee development are a significant aspect in establishing the company's image as an attractive employer in the job market (Ul Hadi & Ahmed, 2018). Thus, the real opportunity for professional advancement becomes one of the reasons why knowledge workers remain loyal to their current employer (Horwitz et al., 2003). Training and development, in particular, strengthens employees' commitment and loyalty, while also increasing staff retention in companies (Bibi et al., 2018).

Employee retention in the hotel business is a serious concern that is becoming more relevant due to the sector's rapid expansion, but also to the increased discrepancy in the supply and demand for skilled human resources (Mehta & Sharma, 2015). The struggle for staff retention is especially acute among younger generations, who perceive a job in a hotel as an entry point into the world of work rather than a possibility for lifelong employment and a basis for building a career (Mohanty & Mohanty, 2020). Frequent employee departures have a detrimental impact on the profitability of the hotel business. However, the negative repercussions of high turnover rates extend beyond financial consequences. Low employee retention rates can impact employee morale (Imanneni & Sailaja, 2020) and harm the hotel's reputation, both among customers and potential job candidates from the labor market. Hotel management may address this issue by developing new training programs and opportunities for career advancement (Vasquez, 2014).

Hotel companies that promote training opportunities and care about their employees' growth encourage long-term retention. Numerous empirical studies support the link between training and development and employee retention (Al Mamun & Hasan, 2017; Kossivi et al., 2016). Analyzing a sample of hotel workers in Malaysia, Bibi et al. (2018) concluded that training and development positively affects their retention. In their research study, Mapelu and Jumah (2013) revealed a direct negative association between training and development and turnover in the hotel business. According to Koster et al. (2009), firm investments in employee training contribute to the perception of support while having a negative influence on the intention to leave the job. Training and development was recognized as a factor of employee retention in studies conducted by Moncarz et al. (2009) and Upadhyaya and Ayari (2019). Sitati et al. (2019) found a strong link between employee development and retention in a sample of Kenyan hotels. Furthermore, Costen and Salazar (2011) discovered that opportunities to gain new skills and prospects for development have a strong positive influence on the intention to stay in lodging industry companies. The preceding findings served as the foundation for developing the first research hypothesis:

H_1: Training and development is positively associated with employee retention in the hotel industry.

The training and development program's adoption is assumed to result in a variety of favorable results. At the organizational level, the experience and loyalty of customers, as well as the overall performance of the firm, are enhanced, and at the individual level, employee outcomes and satisfaction are improved (Jaworski et al., 2018). Furthermore, by giving possibilities for employees' skill development, their commitment to the company is strengthened. Workers with a high level of commitment, according to Rieu and Kamara (2016), are the company's most valuable asset. They are highly motivated, resulting in increased productivity and improved work performance (Yildirim et al., 2015). The most frequent understanding of commitment in the literature is the model developed by Allen and Meyer (1990), which distinguishes three separate dimensions of this concept: affective, continuous, and normative. Affective commitment, according to them, refers to an employee's emotional attachment and identification with the organization, its goals, and values. The connection of an individual with the organization that arises as a result of his perception of insufficient alternatives for employment and the perceived costs of leaving the organization is described as continuous commitment, whereas normative is a reflection of the feeling of obligation to stay with the employer, according to the same authors. Employees acquire a sense that their company cares about their needs and seeks to enhance their skills and abilities when they are given the option for training, and this perception evolves into a deeper relationship with the firm (Upadhyaya & Ayari, 2019).

Training and development is strongly positively related to all forms of commitment – affective, normative, and continuance commitment of employees (Khan et al., 2021). According to Mapelu and Jumah (2013), training and development is a strategy that hotels could employ to produce a productive and committed workforce. Nandi et al. (2020) state that the availability of training and management guidance is a significant factor in employee motivation and commitment growth. Ohunakin et al. (2020) identified training and development as a determinant of organizational commitment in a sample of workers in Nigerian five-star hotels. Employee retention rates increase when they regard training and development activities as investments and feel a strong obligation to ensure the return on such an investment (Hemakumar, 2020), which generates normative commitment to the organization. Atoko et al. (2018) found that training and development had a positive effect on employees' affective commitment. Bulut and Culha (2010) acknowledged that training dimensions such as motivation for training, access to training, benefits gained from participation in the program, and support from managers during training, have a positive effect on the development of organizational commitment of employees in Turkish five-star hotels. Based on this, we developed the second hypothesis:

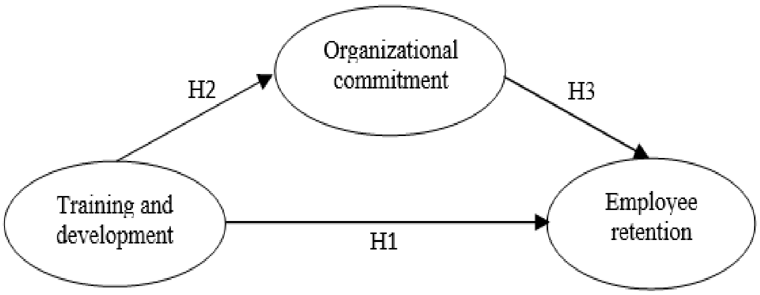
H_2: Training and development is positively associated with the organizational commitment of employees in the hotel industry.

Research shows that a high level of organizational commitment results in a low percentage of absenteeism and human resource turnover (Bulut & Culha, 2010; Rieu & Kamara, 2016; Yildirim et al., 2015). In a sample of 1,500 employees in Cypriot hotels, Zopiatis et al. (2014) proved a negative association between affective commitment and intention to leave the company. In a research model applied by Nandi et al. (2020), employee commitment has a mediating effect on the relationships between the availability of training and managerial support and the intention to leave the job in SMEs in Pakistan. Therefore, organizational commitment has been identified in previous research as one of the positive results of implementing training and development programs, while a certain number of studies recognize it as a significant predictor of employee retention. Khan (2018) found that training and development is a significant predictor of both employee commitment and retention across industries. Furthermore, according to his research, organizational commitment has a greater influence on employee retention than training and development. Therefore, it is necessary to investigate the concept's mediating function in the interaction between training and development on the one hand and staff retention in hotels on the other. The third study hypothesis was created based on these findings:

H_3: Organizational commitment mediates the relationship between training and development and employee retention in the hotel industry.

Figure 1 illustrates the research's conceptual framework, which includes the examined variables and their presumed connections.

Figure 1: The conceptual framework



Source: Authors' research

3. Materials and methods

The survey approach was used to acquire primary data. The questionnaire itself was created by modifying measuring scales from various sources and was divided into four sections. The first three sections provide findings for measuring training and development, organizational commitment, and employee retention, respectively, while the fourth section gathered basic hotel and respondent data. The first section of the questionnaire assessed training and development with 10 items derived from the work of Knox and Freeman (2006), Mapelu and Jumah (2013), Tanwar and Prasad (2016), Sitati et al. (2019) and Zhu et al. (2014). The examples are: *Management invests in staff training and development*, and *If I needed training in a particular area, I would not hesitate to inform the senior manager*. The organizational commitment was measured through 8 statements which were adapted from the scale created by Allen and Meyer (1990), such as *I have a great connection to the hotel where I work, I feel appreciated in this hotel,* or *I feel honored to work in this hotel.* Lastly, the third part of the questionnaire measures employee retention through 7 items, developed based on research conducted by Abeyesekera (2007), Kyndt et al. (2009), and Zopiatis et al. (2014). Meanwhile, some statements used for employee retention assessment were formulated by inverting the scale that measures the intention to leave the job, for instance, *I would not take an offer from another hotel for the same position*. All statements were translated from English to Serbian and adapted to fit the Serbian setting. Respondents expressed their agreement with the items on a five–point Likert scale, with the following alternative answers: 1–I do not agree at all; 2–I mostly disagree; 3–I am not sure; 4–I mostly agree; 5–I completely agree. The data was collected between May and June of 2022. Questionnaires were distributed both in person and electronically and data anonymity was guaranteed. The potential respondents were contacted by email or the social network LinkedIn where they were approached personally by the researcher through a personalized message. The structure of the sample is shown in Table 1.

Table 1: The sample structure

Variable			**Frequency**	**%**
Hotel category		*	28	28.9
		**	33	34
		***	22	22.7
		****	7	7.2
		*****	7	7.2
Number of employees		≤ 9	17	17.5
		10 – 49	58	59.8
		50 – 249	21	21.6
		≥ 250	1	1
Gender		Male	46	47.4
		Female	51	52.6
Age		≤ 25	13	13.4
		25 – 35 years old	33	34
		35 – 55 years old	44	45.4
		> 55	7	7.2
Education		High school	25	25.8
		College	36	37.1
		Bachelor	22	22.7
		Master	14	14.4
Working experience with current employer		≤ 1 year	24	24.7
		1–5 years	23	23.7
		≥ 5 years	50	51.5
Position	Front – office	Employee	44	45.4
		Operations manager	41	42.3
	Back – office	Middle manager	7	7.2
		Top manager	5	5.2

Source: Authors' research

Through frequency analysis, it was determined that the largest number of respondents in the sample work in a two-star hotel. Hotels with 10–49 employees outnumber those with between 50 and 249 employees in the sample. The analysis of the sample structure according to gender shows a greater participation of women, and the dominant age group is between 35 and 55 years old. The majority of surveyed employees completed college or university and they are numerically followed by those with a high school degree. Respondents with more than 5 years of service at their present workplace constitute 51.5% of the observed sample, almost equal to those with less than 5 years. Around half of the respondents are employees (receptionists, maids, etc.), while 42.3% of the sample are operational managers.

The techniques of the statistical software package for social sciences – SPSS 26.0 – were used to analyze primary data. After ensuring the reliability of the variables employed, descriptive statistics, one-way ANOVA, T-test for two independent samples, correlational analysis, as well as a simple and multiple regression approach, were performed.

4. Results

Before verifying the hypotheses, the internal consistency of the questionnaire statements and the reliability of the created variables were evaluated, followed by descriptive statistical analysis. Cronbach's alpha coefficient was used to undertake reliability analysis. Nunnally (1978) defines the variable as reliable if the value of this coefficient exceeds 0.7. Table 2 shows the findings of the reliability analysis and descriptive statistics.

Table 2: Reliability analysis

Variable	Cronbach's alpha
Training and development	0.83
Organizational commitment	0.86
Employee retention	0.82

Source: Authors' research

For all three variables, the calculated Cronbach's alpha coefficient is greater than 0.8. Based on the results, it is possible to conclude that the statements used have a high degree of internal consistency and created constructs are reliable. According to the indicators of descriptive statistics, the highest degree of agreement among respondents is present in the statement *I feel appreciated in this hotel* (M=3.93), which assessed organizational commitment and refers to its affective dimension. The lowest standard deviation was recorded for the statements *The hotel promotes job rotation* (SD=1.15) and *If I left this hotel, many things in my life would be disrupted* (SD=1.16). The highest heterogeneity of responses was found for the statement *My plan is to stay at this hotel for at least another five years* (SD=1.56) which assessed employee retention.

One-way ANOVA analysis was used to determine whether there were any statistically significant differences in training and development perceptions, organizational commitment, and retention between groups in terms of educational level. We categorized all respondents into three groups based on their level of education: those who completed high school (group 1), those with a university degree (group 2), and respondents with a master's degree (group 3).

Table 3: ANOVA test for the groups with different levels of education

Variable	F	Sig.
Training and development	8.21**	0.001
Organizational commitment	4.58*	0.013
Employee retention	5.61**	0.005

* The value is significant at the level equaling 0.05
**The value is significant at the level equaling 0.01
Source: Authors' research

The findings of the ANOVA are presented in Table 3. The test revealed that evaluations of training and development, organizational commitment and employee retention differ depending on educational level. Differences in perceived training and development opportunities, as well as retention within the present employer, are statistically significant at the 0.01 level, but differences in organizational commitment across respondents from various groups are significant at 0.05.

A post hoc Scheffe test was carried out to examine which groups of respondents according to education were statistically different in terms of evaluating the three analyzed constructs. The results are shown in Table 4.

Table 4: The results of post hoc Scheffe test

Variable	**Intergroup comparisons**	**Means difference**	**Sig.**
Training and development	Group 1 – Group 2	0.24	0.607
	Group 1 – Group 3	–0.96*	0.018
	Group 2 – Group 3	–1.19**	0.001
Organizational commitment	Group 1 – Group 2	0.20	0.651
	Group 1 – Group 3	–0.61	0.134
	Group 2 – Group 3	–0.81*	0.013
Employee retention	Group 1 – Group 2	0.37	0.392
	Group 1 – Group 3	–0.73	0.154
	Group 2 – Group 3	–1.10**	0.006

* The value is significant at the level equaling 0.05
**The value is significant at the level equaling 0.01
Source: Authors' research

The findings showed that there was a statistically significant difference in perception of training and development provided by the employer between respondents with a high school degree and those with completed master's ($p<0.05$). Furthermore, the mean values of training and development differ between respondents with a university degree and those with a master's degree ($p<0.01$). Statistically significant differences in organizational commitment and employee retention were identified between groups 2 (bachelor's) and 3 (master's degree respondents) at the 0.05 and 0.01 significance levels, respectively.

Respondents were further classified into those in direct contact with clients (front-office) and those in administrative and supporting roles (back-office). A comparison of the mean values of training and development, commitment, and retention in two specified groups was done using the T-test for two independent samples. The results are given in Table 5.

Table 5: Comparison between front-office and back-office employees (T-test for two independent samples)

Variables	Front–office M (SD)	Back–office M (SD)	Mean difference	t	Sig.
Training and development	3.12 (1.07)	3.79 (0.79)	–0.67*	–2.62	0.018
Organizational commitment	3.21 (0.94)	3.78 (0.77)	–0.57*	–2.02	0.046
Employee retention	3.12 (1.19)	3.91 (0.81)	–0.79**	–2.93	0.009

* The value is significant at the level equaling 0.05
**The value is significant at the level equaling 0.01
Source: Authors' research

For all three variables examined, statistically significant differences between front-office and back-office staff were found. The largest distinction between respondents from the two groups was manifested in employee retention (–0.79; $p<0.01$). A higher level of retention was found for back-office employees. They were also more committed to the hotel and they perceived training and development opportunities as more optimistic compared to front-office employees.

Table 6: Correlational matrix

Variable	1	2	3
Training and development	1	0.796**	0.763**
Organizational commitment	0.796**	1	0.863**
Employee retention	0.763**	0.863**	1

** The value is significant at the level equaling 0.01
Source: Authors' research

Table 6 summarizes the findings of the correlation analysis, which looked at the strength and direction of the link between the observed variables. Because the Pearson coefficient for each observed association is positive and ranges between 0.763 to 0.863, it can be stated that the variables of the applied research model have a statistically significant positive and strong relationship. According to the findings, organizational commitment and employee retention have the strongest correlation ($r=0.863$), while the value of the Pearson coefficient is the lowest for the relationship between training and development and employee retention.

The mediation regression approach was used for hypotheses testing. According to Baron and Kenny (1986), the following conditions must be followed in order to assess the mediation effect: The first step is to confirm the significant direct influence of the independent variable on the dependent variable; another simple linear regression examines whether the independent, i.e. the predictor variable, affects the potential mediator, and the next step is to demonstrate that the mediator significantly influences the dependent variable. The conditions for the final testing of the mediator effect are produced by validating these assumptions, and in the last phase, the joint influence of the independent variable and the proposed mediator on the dependent variable is examined using multiple linear regression. Ultimately, for a mediating effect to be established, the hypothetical mediator must be a statistically significant predictor of the dependent variable while the influence of the independent variable reduces (partial mediator effect) or ceases to be statistically significant, which is regarded as a full mediator effect.

Table 7: The results of regression analysis

Variables	Dependent variable: Employee retention			Dependent variable: Organizational commitment		
	β	**Sig.**	**R^2**	**β**	**Sig.**	**R^2**
Training and development	0.763	0.000**	0.583	0.806	0.000**	0.562
Organizational commitment	0.863	0.000**	0.743			

** The value is significant at the level equaling 0.01
Source: Authors' research

The influence of training and development on employee retention was initially tested using simple regression analysis, in accordance with the previously described technique for finding mediator effects. Its results are given in Table 7. The findings revealed that training and development is a statistically significant predictor of employee retention ($\beta=0.763$, $p<0.01$), with the observed independent variable explaining 58.3% of the variance in retention. Training and development has a significant positive effect on organizational commitment ($\beta=0.806$, $p<0.01$), with the coefficient of the determination being 0.562, indicating that in 56.2% of cases, training and development determines commitment. In the third step, it was discovered that commitment had a significant positive effect on employee retention ($\beta=0.863$, $p<0.01$), which matched all of the criteria for assessing the mediator effect.

Table 8: Multiple linear regression analysis

Variables	Dependent variable: Employee retention			
	β	**Sig.**	**R^2**	**VIF**
Training and development	0.207	0.015*	0.756	2.734
Organizational commitment	0.698	0.000**		2.734

* The value is significant at the level equaling 0.05
** The value is significant at the level equaling 0.01
Source: Authors' research

A multiple regression analysis was conducted to examine the joint effect of training and development and organizational commitment on employee retention in the hotel industry (Table 8). Three multivariate assumptions were measured to check the justification for multiple regression. The VIF coefficient (variance inflation factor) was used to determine multicollinearity. Since the value of the VIF coefficient in the observed regression model is less than 5, it can be concluded that multicollinearity is not a concern in this research. The linearity assumption is also met and there is no drastic deviation from the normality of the data distribution. The multiple regression results revealed that organizational commitment has a significant impact on employee retention ($p<0.01$), while the impact of training and development on retention is significantly reduced, implying that commitment has a partial mediating effect in the aforementioned relationship.

5. Discussion

The findings of the empirical research revealed that training and development had a statistically significant positive influence on staff retention in hotels, verifying hypothesis H_1. In their studies, Bibi et al. (2018), Costen and Salazar (2011), and Mapelu and Jumah (2013), all reached the same result. The findings are almost consistent with those of Al Mamun and Hasan (2017), Kossivi et al. (2016), Koster et al. (2009), Sitati et al. (2019), and Upadhyaya and Ayari (2019). This finding demonstrates the importance and value of training and development programs in shaping individuals' intentions to stay at their present workplace. Employees are less likely to leave a hotel if they have access to proper training and development opportunities, as well as the encouragement of superiors in their implementation. Training and development investments thus become a long-term asset based in prospective employee satisfaction and loyalty to the employer. The willingness to stay within the organization is largely determined by how well the employees' needs are addressed. The prerequisite for meeting the need for self-actualization is the availability of training and development opportunities.

The study also validated hypothesis H_2, which states that training and development is positively associated with the organizational commitment of hotel employees. According to the findings of this study, in addition to affecting their retention, training and development also tends to build employees' commitment to the hotel where they work. The acquired results are compatible with prior studies by Mapelu and Jumah (2013) and Bulut and Culha (2010), and are partly consistent with the findings of Nandi et al. (2020) and Atoko et al. (2018). According to the results obtained, hotel management that actively implements training and development programs and provides support to staff in mastering new skills achieves a high level of employee commitment. The possible explanation for such finding is that employees create a sense of moral duty to the organization and a responsibility to stay when they are given opportunities for training and development.

The study also found that organizational commitment acts as a mediator in the relationship between training and development and employee retention in hotels in the Republic of Serbia, confirming hypothesis H_3. Such an effect in the specified relationship implies that the causal links between the presented variables are partially dependent on the organizational commitment level. Training and development programs, when properly implemented, have the potential to retain employees in the hotel. However, if they have a strong organizational commitment, they will stay in their roles even if training and development initiatives are still in the early stages. The perception that the hotel is concerned about the employee's long-term professional development enhances feelings of loyalty and commitment. However, if specific reasons prevent a hotel from offering training and development programs, they should pursue alternative commitment enhancement strategies in order to retain high-quality staff. In light of the findings of this study, which identified commitment as a significant predictor of employee retention as well as its ability to compensate for inadequately established training and development programs, other possible strategies to enhance commitment should be investigated.

6. Conclusion

A properly designed and implemented training and development strategy has various advantages for the hotel industry. In the context of human resource management in hotels, the implementation of effective training and development programs influences the creation of great work attitudes, which enhances employee retention. The research examines how organizational commitment affects the strength of the causal link between training and development and employee retention. This explained how training and development impacts workers' intentions to stay with their present company and stressed the significance of organizational commitment as a factor of employee retention in hotels. Thus, empirical information on the relations that illustrate how the offered possibilities for training and development of hotel employees are transformed into their intention to stay with the current employer is presented. Perceived chances for training and development among hotel staff improve their emotional attachment and sense of obligation to stay. Therefore, the study proved the relationship between training and development, on the one hand, and the commitment and retention of employees, on the other, thus confirming the results of previous research in this area. However, with this research, we made a step forward by examining the mediating role of organizational commitment in a given relationship in the hotel industry.

The study also offers practical implications for hotel management based on the reported results. The fundamental recommendation is the establishment and planned execution of structured internal and external training programs. Every employee must have access to alternatives for professional growth and continual improvement of work skills. Identifying the need for training and investing in it should become an integral element of the human resource management strategy for the hotel business. Effective managerial guidance is essential to achieve the required efficacy of the training program. Hotel managers at all organizational levels should be responsible for mentoring staff throughout training. At the same time, just conducting training and development is insufficient to deliver the desired results in terms of establishing positive employee working attitudes. It is critical that these programs are coupled with suitable motivational support in order to instill a sense of confidence in employees and to establish strong positive work attitudes, such as commitment and retention, in addition to obtaining the essential skills. Furthermore, the proven mediating effect of organizational commitment in the examined relationship gives important guidance for hotel HR managers. Specifically, if hotels with a low staff retention rate cannot deliver the expected level and quality of training and development opportunities, it is vital for them to concentrate on strengthening organizational commitment through certain strategies. Organizational commitment, in this sense, represents a sort of compensation for insufficient training and development chances.

The conducted research faces certain limitations. One of them arises from the features of the sample and is evident in the limited number of respondents. Future studies on a larger sample size would produce results with more validity and reliability. Another issue is that the study model assesses the influence of total employee commitment rather than its individual dimensions. The recognized limits of the study serve as the foundation for determining future research paths. Thus, it would be interesting to investigate the impacts of various antecedents of employee retention, as well as the diverse mediating effects of other work attitudes, such as satisfaction and perceived job security. Furthermore, multiple distinctive dimensions are observed within the construct of training and development in the modern literature and practice, therefore it would be beneficial to investigate the individual effects of these factors on commitment and retention among hotel employees.

Conflict of interest

The authors declare no conflict of interest.

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The quality of hotel service as a factor of achieving loyalty among visitors

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Abstract: The quality of service, as well as the impact of hotel business on achieving loyalty among hotel visitors, has always been a topic of research in the world. The aim of this research was to determine the level of service quality achieved in hotels at Mount Zlatibor, as well as whether quality factors influence the creation of loyalty among hotel visitors. The results of multiple regression analysis showed an evident influence of both tangible and intangible quality factors on loyalty. However, a slightly greater degree of influence of intangible factor was noted. Research can have theoretical and practical importance, as a complement to existing research, as well as for creating a hotel's business strategy.

Keywords: service quality, loyalty, hotel service
JEL classification: O14, L83, Z32

Kvalitet hotelske usluge kao faktor postizanja lojalnosti posetilaca

Sažetak: Kvalitet usluge, kao i uticaj hotelskog poslovanja na postizanje lojalnosti među posetiocima hotela, oduvek je bila tema istraživanja u svetu. Istraživanje je imalo za cilj da utvrdi nivo kvaliteta usluga koji se postiže u hotelima na Zlatiboru, kao i da li faktori kvaliteta utiču na stvaranje lojalnosti kod posetilaca hotela. Rezultati višestruke regresione analize pokazali su evidentan uticaj oba faktora kvaliteta (materijalni i nematerijalni faktori) na lojalnost, s tim što je utvrđen nešto veći stepen uticaja nematerijalnog faktora. Istraživanja mogu imati teorijski i praktični značaj, kao dopuna postojećim istraživanjima, kao i za kreiranje poslovne strategije hotela.

Ključne reči: kvalitet usluge, lojalnost, hotelska usluga
JEL klasifikacija: O14, L83, Z32

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1. Introduction

A very important aspect of business in tourism and hotel industry is the achievement of quality service of all material and immaterial elements (Ahmad et al., 2018). The creation of trust among consumers is based on meeting the demands of tourists, and this can only be achieved with a quality offer (Amin et al., 2013). Serbia is known for its natural and anthropogenic resources, which from year to year are more and more adapted to the visits of domestic and foreign tourists. Mount Zlatibor, as a tourist center, is distinguished by the successful provision of tourist and hospitality services, especially if we take into account that the business is characterized by a seasonal character (Seočanac & Sekulić, 2020; Vukolić et al., 2021). Precisely for the reason of prominent seasonality at Zlatibor, the study of the quality of services of hotel facilities is of great importance for strategic, continuous and long-term business and survival on the market (Gajić et al., 2018; Hayati & Novitasari, 2017). Sivakumar et al. (2014) in their research point out that quality service contributes to the creation of loyal visitors to hotel facilities and increases the possibility of their returning to the same facilities or destination. Moreover, the same authors claim that every hotel company can achieve competitiveness through quality service (Hossain, 2012). Total quality includes all aspects of the service provided to hotel visitors (Ho et al., 2013). If the dimension of service quality is not in accordance with the expectations of the guests, then a high degree of dissatisfaction of the visitors is definitely expected. Modern business and innovations impose new trends in the marketing of hotel facilities, and they strive to accept new trends in order to attract visitors, and to create loyal customers with quality service (Nurittamont, 2021). The views on the achieved quality of service, as well as the impact on the creation of loyalty are different depending on the author's perception and the area of research (Majid et al., 2018; Zrnić et al., 2021). Although most authors agree on the fact that quality service dictates loyalty, there are certain opposing theories claiming that quality is still an overrated category (Anabila et al., 2022).

Based on the research problem, as well as the researched literature on similar issues, the authors conducted a survey in order to determine the current quality of the offer in three hotels at Zlatibor, i.e. the Mona, Hotel Olymp and Hotel Tornik. The aim of the current research was determining the influence of certain quality factors on loyalty. Similar research was conducted by Akbaba (2006), and the authors used a modified questionnaire, taking questions related to quality, and making small changes during the translation into the Serbian language in order to include quality. Descriptive statistical analysis determined the average ratings for each item. Then, multiple regression analysis was used to determine the influence of the obtained factors on the criterion variable loyalty. The results of the multiple regression analysis showed an evident influence of both quality factors on loyalty, i.e. material and non-material ones. However, the results point to intangible factors as those positively and directly influencing loyalty to a greater extent.

Research has multifaceted significance, primarily in determining the level of quality of the hotel offer at Zlatibor. The results reached by the authors can certainly serve as a basis for a larger-scale research on the same issue. Also, by pointing out certain business shortcomings, it will be possible to influence the future business of hotel facilities in the direction of providing a better service, and therefore overcoming strong competition in the modern market.

2. Literature review

Modern consumers have increasing demands in terms of quality service, which further dictates the creation of loyalty and the repeated return to visitors (Gajić et al., 2019). In order to achieve long-term business and competitive advantage, satisfied guests are needed in the hotel industry (Nair & Choudhary, 2016). The quality of hotel service is becoming an indispensable segment in business on the modern market, and only a quality product can win over loyal visitors and ensure their return (Jasinskas et al., 2016). On the other hand, Arbelo-Perez et al. (2017) indicate that quality hotel service, provided in an adequate manner, can be considered a factor in attracting visitors, whose expectations will be met, and thus the gap between the expected and provided service will be reduced (Sharma & Srivastava, 2018). The main task of the hotel is to provide the highest quality service that visitors will remember and pass on as their positive experience (Gaunker & Gaonkar, 2021). Research shows that constant monitoring of quality from the beginning of service provision to the actual delivery to the visitor creates sure loyalty (Gajić et al., 2020). When the complete satisfaction of hotel visitors with quality service is achieved, there is a high probability of creating loyal visitors who will pass on their satisfaction to other potential visitors (Nair & Choudhary, 2016). It is certainly the promotion of the name and reputation of the hotel facility, and a way to beat the competition in the domestic and foreign markets (Amin et al., 2013). Quality standards are certainly elements of meeting needs and high quality long-term business (Duman et al., 2019). As for the quality elements of a hotel service, these are most often material and immaterial elements of quality (Benko et al., 2022; Getty & Thompson, 1994; Kovač-Žnideršić et al., 2008). The material elements include all types of services related to the comfort of accommodation, the comfort and appearance of rooms, the entire interior and everything that is tangible and visible to a visitor during his stay at a hotel (Dabholkar et al., 2000; Dávid et al., 2003; Novotny et al., 2015). The non-material elements of the service also have a very important influence on the visitors satisfaction, as well as on creating loyalty to returning to the hotel. Material elements of quality refer to service staff and interpersonal relations, more precisely the interaction of service providers with visitors (Alreahi et al., 2023a; 2023b; Kandampully & Suhartanto, 2000).

Quality is the primary task of the business of every hotel, and the service that is provided with all the aspects of quality, undoubtedly creates future loyal visitors, which potentially leads to the loyalty of hotel services users (Steiger, 2011; Varley & Medwey, 2011). The provision of the best possible service by the hotel enables the achievement of a competitive advantage, with the quality not being reduced in relation to the business season and similar limiting factors (Bello & Bello, 2017). In many cases, it is not possible to achieve the satisfaction of visitors, primarily because of the lack of quality service provided, and as a result of comparing the expected and received service, mistrust is created on the part of visitors, i.e. disappointment among visitors and the decision not to return to the same hotel (Kandampully et al., 2015; Ismail & Yunan, 2016). The assessment of hotel service quality, before and after its use, contributes to the assessment of the size of the gap between the expected and received service (Berezan et al., 2013; Sharma, 2014). Chen (2015) asserts that visitor loyalty is the most important segment of research in business, and that this type of research in the hotel market is a holistic approach. Based on such an approach, it is possible to expect the return of visitors (Mason et al., 2006).

Creating satisfied and therefore loyal visitors who will most likely return to the same hotel is one of the most important tasks in hotel business research (Saleem & Raja, 2014). Gajić et al. (2020) have established that the quality of hotel service in mountain centers in the Republic of Serbia is at a satisfactory level, maintaining that a high level of loyalty among visitors can be expected. A similar survey was conducted by Duglio and Beltramo (2014), who found that achieving excellence in hotel service quality is the most important segment in long-term business. In their research, they included 372 visitors to hotel facilities in the Piedmont region. Quality service must be provided regardless of the size of the facility, as confirmed by Scott et al. (2007), investigating the quality of lodging services in the Canadian Rockies. Moreover, they arrived at results that confirm the loyalty of visitors and their return. Banki et al. (2014), on a total sample of 217 visitors to Obudu Mountain Resort, confirmed the inextricable link between loyalty and visitor return.

In this research, the authors started from the following hypotheses:

H_1: The quality of the existing service is at a satisfactory level.

H_2: Material and non-material elements of quality affect the loyalty of visitors.

3. Methodology

Sample, operationalization and measuring model

The questionnaire was distributed to hotel visitors on a random basis, in th period January - April 2022. Out of 700 distributed questionnaires, only 540 completely filled questionnaires were analysed. To collect primary data, a modified questionnaire from Akbaba (2006) was used to examine the attitudes and opinions of guests about the quality of services in three hotels at Zlatibor: hotel Mona (228 questionnaires), Olymp (106 questionnaires) and Tornik (206 questionnaires). The questionnaire consisted of three parts with a total of 20 questions, and the parts were devoted to examining the quality of material service, immaterial service and general satisfaction of visitors. A total of ten items from the questionnaire described the material elements of hotel service, seven items looked into the non-material ones and three items related to the loyalty of hotel visitors.

Data on the sociodemographic structure of respondents are as follows: a total of 18.5% are aged 18 to 25, followed by 40% aged 26 to 40 and 41.5% older than 41. Then, there are a total of 56.2% of respondents with university education, 38.9% with high school education and 4.9% with MSc and PhD degrees. In the sample of the total number of respondents, 32.5% have a monthly salary below 500 euros, 51.1% from 500 to 1,000 euros, while 16.4% earn above 1,000 euros. A five-point Likert scale was used (1 – strongly disagree, 5 – strongly agree). Data analysis was performed using the statistical program IBM SPSS 23.00 (Statistical Package for Social Sciences SPSS 23.00). Arithmetic mean and standard deviation were calculated for each element through descriptive statistical analysis. For each item, reliability was determined using Cronbach's alpha analysis, and it was shown that each statement is internally consistent. Determining the influence of factors on loyalty was done using multiple regression analysis.

4. Results and discussion

Table 1 shows the results of descriptive statistical analysis. When looking at the average ratings of the material elements, it can be seen that the highest average rating is carried by the items *Appearance of accommodation* m= 4.1, followed by *The presence of gyms and swimming pools and spa centers* m= 4.02. The lowest graded element is *The appearance of the restaurant* with an average grade of m=2.22. The quality of the equipment, *The position of the hotel*, *The quality of food and drinks* were rated above 3, which is a satisfactory rating.

Table 1: Descriptive values of each item

Factor	Statement	m	sd
Material elements	The position of the hotel	3.992	1.164
	Appearance of the hotel	3.998	1.424
	Appearance of accommodation	4.192	1.336
	Quality of equipment in the hotel	3.131	1.408
	Accommodation comfort	2.167	1.334
	Accommodation equipment with additional content	2.137	1.341
	Appearance of the restaurant	2.072	1.285
	Quality of food and drinks	3.610	1.464
	The presence of gyms and swimming pools and spa centers	4.027	1.302
	Other additional hotel facilities	2.222	2.169
Non-material elements	Quality of staff	3.897	2.074
	The quality of the manager's work	3.565	2.130
	Courtesy of the employees	3.092	1.970
	Quality of information service	3.311	2.015
	Reception quality	3.931	2.156
	Easy booking method	3.039	1.968
	The possibility of changing the room	3.576	2.105
Loyalty	Overall loyalty	3.533	2.025
	Positive attitude about the hotel	3.376	2.0318
	Return to the hotel again	3.500	2.0470

*****m – arithmetic mean; *****sd – standard deviation
Source: Authors' research

Regarding non-material elements, the item of *Reception quality* (m=3.9) has the highest average score, followed by *Quality of staff* (m=3.8) and *The possibility of changing the room* (m=3.5). The lowest grade in this group of elements belonged to the item *Easy booking method* (m=3.03). Loyalty elements were assessed with an average score above three, which is considered a good average score based on the given scale. Given that most of the items related to quality were rated with a good average rating, it can be said that the first hypothesis H_1 is confirmed: The quality of the existing service is at a satisfactory level.

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was used to measure the suitability of the data for factor analysis. Given that the obtained values are satisfactory (KMO =0.916; X^2=5158.8; df=190; p=0.00), further EFA analysis was undertaken (Tucker & MacCallum, 1997). With promax rotation EFA analysis, three factors were identified based on 20 characteristics (Table 2).

Table 2: Rationalization of the number of items through promax rotation (factor loading)

Items	**Factor Loading**		
	F1	**F2**	**F3**
Quality of staff		.920	
The quality of the manager's work		.910	
Courtesy of the employees		848	
Quality of information service		.716	
Other additional hotel facilities	.569		.331
Reception quality		.485	.451
Appearance of the hotel	.410	.330	
Quality of equipment in the hotel	.395		
Accommodation equipment with additional content	.853		
The presence of gyms and swimming pools and spa centers	.751		
Appearance of the restaurant	.731		
Appearance of accommodation	.727		
Accommodation comfort	.722		
The position of the hotel	.551		
Quality of food and drinks	.443	.	
Return to the hotel again			.849
Overall loyalty			.782
The possibility of changing the room		.762	
Positive attitude about the hotel			.740
Easy booking method		.642	

Source: Authors' research

Cronbach's alpha coefficient was used to determine the internal consistency of he questionnaire, where all values above 0.7 were accepted as very good borderline values (Tucker & MacCallum, 1997) (Table 3).

Table 3: Descriptive values and reliability for all factors

Variable	**Cronbach's alpha**	**Arithmetic mean**	**Standard deviation**
Material elements	0.781	6.99	1.164
Non.material elements	0.817	6.19	1.424
Loyalty	0.879	5.00	1.336

Source: Authors' research

Exploratory factor analysis extracted exactly three factors, i.e. material elements (10 questions), intangible elements (7 questions). Three questions are related to loyalty, and values were also calculated for the loyalty factor (Table 3). All values are given in Table 3. Factor analysis starts from measures of connection between variables, correlation coefficients or covariance. Due to the large number of variables and their coefficients, a deeper and clearer insight into the laws and structure of the studied phenomena is difficult. It serves to check the used questionnaire and reduce the number of variables, i.e their grouping.

Table 4 shows that the percentage of explained variance is 57%, while the first factor had the highest saturation (38.3%), the second factor had a saturation of 11.8%, while the third factor had a saturation of 6.4%.

Table 4: The results of exploratory factor analysis

Factors	**Extraction Sums of Squared Loadings**		**Rotation Sums of Squared Loadings[a]**	
	Total	% of Variance	Cumulative %	Total
1	7.669	38.347	38.347	6.370
2	2.373	11.865	50.212	5.141
3	1.289	6.444	56.656	5.582

Extraction Method: Principal Component Analysis
Source: Authors' research

Multiple regression analysis examines the dependence of one phenomenon over two or more independent phenomena. Regression analysis measures the influence of all factors on the criterion variable Loyalty (Table 5).

Table 5: Impact of material and non-material factors on guest loyalty

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	t	p-value
		B	Std. Error	Beta		
1	(Constant)	1.600	.076		20.992	.000
	Material elements	.161	.027	.250	5.914	.000
	Non-material elements	.371	.026	.593	14.030	.000

a. Dependent Variable: Loyalty, $p<0.01$
Source: Authors' research

The results of the multiple regression analysis indicate a significant partial contribution and a statistically significant influence of both factors on the criterion variable Loyalty: material elements (material elements – ß =0.250, p=0.00, t= 5.914; non-material elements ß=0.593, =0.00, t=14.030). The results show that both material and non-material elements have influence on loyalty, with the observation that non-material elements have a stronger impact than material ones. This confirms the hypothesis H_2.

5. Conclusion with future implications and limitations

One of the key problems of establishing quality in hotels in Serbia is certainly the lack or insufficient application of existing standards. The quality of service is certainly an important factor that influences the creation of a positive image of tourists about a hotel and a destination. In this way, if a high-quality service is achieved, it is possible to achieve a high degree of loyalty among visitors, and therefore the possibility of returning to the same hotel.

The primary task was to determine the influence of the quality factor on the creation of loyalty among visitors to hotels at Zlatibor. The authors conducted field research in three hotels at Zlatibor, on a total sample of 540 respondents. Descriptive statistics were used to determine the grades for each item (Akbaba, 2006), as well as for all factors obtained by factor analysis. The existence of three factors was determined, one of which served as a criterion variable – loyalty. A high degree of reliability was achieved based on the reliability analysis. After that, the authors performed a multiple regression analysis to see the impact of tangible and intangible elements on visitor loyalty. The set hypotheses were confirmed and it was established that all factors had a partial direct and positive influence on the loyalty criterion.

The operation of hotels in the mountains of the Republic of Serbia has a pronounced seasonality and is therefore specific, and it is necessary to examine the level of quality of the offer in order to ensure continuity in operation.

Since the literature on hotel business at the mountains of Serbia is very scarce, the significance of the research is reflected in contribution to the existing literature. Moreover, the practical implications of the research are reflected in the use of the obtained results for future research, as well as in the application in hotel business management, in order to improve the offer and achieve long-term positive business. The results of the research can serve as a good strategic tool for planning the development of quality services in the hotels where the research was carried out. Additionally, managers can correct operations and minimize mistakes by looking at the results and answers of respondents, and to reduce costs. By affecting the increase in the quality of the offer, it will achieve a certain degree of loyalty among visitors.

The limitations of the research are primarily reflected in non-cooperation of the respondents with the researchers. The fear of the pandemic is still present, but visitors also give socially desirable answers. In addition, one of the limiting circumstances of the research is the fact that the respondents are only domestic visitors. Foreign respondents mostly refused to cooperate, and those who participated did not give complete answers in the questionnaire. Respondents with an older age structure very often gave socially desirable answers.

Conflict of interest

The authors declare no conflict of interest.

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Social media and corporate image as determinants of global and local brands purchase: Moderating effects of consumer openness to foreign cultures

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Abstract: The main goal of this paper is to analyze the impact of social media marketing activities (SMMA) and corporate image as antecedents of global and local brands purchase. Furthermore, the goal of this research is to determine whether consumer openness to foreign cultures has moderating influence on selected relationships in the research model. The sample of 372 respondents was collected. Hypotheses were tested using structural equation modeling. For both local and global brands, SMMA and corporate image have a positive impact on consumer attitudes. Additionally, consumer attitudes influence positively consumer intentions concerning the purchase of both types of brands, and intentions have the same influence on the actual purchase of analyzed brands. Consumer openness to foreign cultures has moderating influence on relationships between the corporate image and consumer attitudes, regarding both global and local brands.

Keywords: local brand, global brand, social media, corporate image, consumer openness
JEL classification: M31, Z30

Društvene mreže i imidž kompanije kao determinante kupovine domaćih i globalnih brendova: Moderacijski uticaj otvorenosti potrošača ka inostranim kulturama

Sažetak: Osnovni cilj rada je analiza marketinških aktivnosti na društvenim medijima i imidža kompanije kao determinanti kupovine domaćih i globalnih brendova. Pored toga, analizirano je da li otvorenost potrošača ka inostranim kulturama ima moderacijski uticaj na odabrane veze u modelu istraživanja. Sprovedeno je empirijsko istraživanje na uzorku od 372 ispitanika. Modeli strukturalnih jednačina su korišćeni za određivanje glavnih i moderacijskih efekata. I za domaće i za globalne brendove, marketinške aktivnosti na društvenim mrežama i imidž kompanije imaju pozitivan uticaj na stavove potrošača. Pored toga, stavovi potrošača pozitivno utiču na namere potrošača, a namere utiču pozitivno na samu kupovinu analiziranih brendova. Otvorenost potrošača prema inostranim kulturama

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ima moderacijski uticaj na veze između imidža kompanije i stavova potrošača, kako u pogledu domaćih, tako i globalnih brendova.

Ključne reči: domaći brendovi, globalni brendovi, društvene mreže, imidž kompanije, otvorenost potrošača
JEL klasifikacija: M31, Z30

1. Introduction

Technology, communications, consumer mobility, and travel affect the reduction of the importance of national borders, leading to the homogenization of needs and demand on a global level. Companies address this homogenization with standardized global products or services, i.e. global brands. However, the same trends strengthen the national and cultural identity (Salomao et al., 2022). In such conditions, when purchasing various products and services, consumers often have the choice of whether to buy local brands or foreign, most often, global brands.

Global brands are perceived by consumers as a tool able to create a global identity, through which they develop the sense of belonging to the global world (Salomao et al., 2022). This is especially pronounced with consumers who like to travel and feel willing to engage with foreign cultures, since traveling can open consumers up to different places, experiences, and ideas. These consumers want to be involved in the global consumer culture and therefore choose more often global alternatives, when it comes to brands, compared to local ones.

In modern business conditions, communicating with consumers and maintaining a positive image is of key importance for the success of a company. Social media has evolved into a significant part of customers' lives, on a global level, in terms of attitudes, judgments, and purchases of many products or services (Shang et al., 2022). Additionally, the features of social media allow consumers to promptly and straightly express and share their attitudes and evaluations concerning a company and products, i.e. corporate image and reputation (Etter et al., 2019; Ji et al., 2019). In contemporary market conditions, a positive corporate image is one of the essential sources of long-lasting competitive advantage (Baruk & Wesołowski, 2021). Bearing in mind the importance of social media and corporate image in today's global market, the main goal of this paper is to analyze the influence of these determinants on the attitudes towards local and global brands, as well as their mutual relationship. Furthermore, the goal of this paper is to determine whether consumer openness to foreign cultures has moderating influence on selected relationships in the research model.

2. Literature review

2.1. Social media marketing activities (SMMA)

In reviewing the literature, the authors analyzed the interdependence between the variables of this research. Although there is a certain number of papers that look into the relationships between these variables in foreign literature, there is a notable in Serbian. That is why we thought it would be useful to examine these relationships on the Serbian market and to determine the differences between these links, on both domestic and foreign markets. The emergence and development of social networks have greatly changed how businesses worldwide manage their brands. In particular, social networks have an increasing influence on the entire business of a company, as well as the behavior of consumers, the connections between them and the company, and the traditional ways of managing brands (Hennig-Thurau et al., 2010). In fact, social networks are increasingly considered the main sources of information consumers use when it comes to purchasing products and services (Zhu et al., 2016). In addition, social media have completely transformed the way consumers gather information about businesses and their brands, and also the way they communicate with brands, since they see social media as an important and practical communication platform (Boateng & Okoe, 2015). This is the reason why international and global companies are increasingly adopting and using social networks as a means of promoting brands, and influencing consumer behavior and creating connections with them (Gao et al., 2018; Jiao et al., 2018; Johnston et al., 2018; Okazaki & Taylor, 2013).

Social media has created new touch points for consumers and brands globally, therefore creating a double impact, as social networks have reshaped the activities of both consumers and businesses. When it comes to consumers, it was proven by different authors that they perceive content generated by themselves, as users of social networks, as a more trustworthy source of information than content which companies publish through traditional means of communication (Logan et al., 2012; Mangold & Faulds, 2009). As a consequence, consumers become central creators of brand content and interactions, and thus have an increasingly active part in the process of communication (Okazaki & Taylor, 2013).

Although it is a somewhat new field of research, a number of papers have proven that companies' social media marketing activities positively influence different aspects of consumers' behavior towards brands, including consumer preferences, brand perceptions, brand purchase attitudes, as well as brand loyalty (Barcelos et al., 2018; Seo & Park, 2018; VanMeter et al., 2018). Even though few studies had global and local brands in focus, certain authors have determined the positive influence that companies' activities on social networks have on consumer behavior regarding these types of brands (Berthon et al., 2012; De Vries et al., 2012; Gao et al., 2018; Hatzithomas et al., 2016; Johnston et al., 2018; Makri et al., 2019; Morra et al., 2018; Okazaki & Taylor, 2013). Therefore, the following hypothesis is proposed:

H_1: Social media marketing activities have a statistically significant and positive influence on consumer attitudes toward local/global brands.

2.2. Corporate image

Corporate image is the instantaneous mental image that a person has of a company. This can significantly influence the sense of connection of individuals with the company, which will consequently have an effect on their behavior (Balmer et al., 2011; Karaosmanoglu et al., 2011). The corporate image originates from consumers' perceptions, feelings, and expectations about the products and services that the company sells (Aydin & Ozer, 2005).

Companies are focused on their image since it positively influences marketing and business results of the corporation (Lee & Kotler, 2011; Sen & Bhattacharya, 2001). In previous research, it was proved that corporate and brand image have positive impact on certain aspects of consumer behavior, such as their attitudes and purchase intentions. Accordingly, the assumption that corporate image positively influences attitudes and evaluations that consumers have about the purchase of different brands has been analyzed and confirmed in a number of recent studies (Heinberg et al. al., 2018; Jung & Seock, 2016; Lee & Lee, 2018; Wilkins & Huisman, 2014).

Although the effect of corporate image on consumer behavior has been empirically confirmed in many studies, very few studies have analyzed the influence of corporate image on various aspects of consumer behavior and branding, when it comes to international and global brands (Heinberg et al., 2018; Omar et al., 2009; Wilkins & Huisman, 2014; Zhang et al., 2019). In a research by Heinberg et al. (2018), it was determined that corporate image impacts consumers' attitudes and decisions about buying a brand, and that corporate reputation has a mediating effect on this relationship, in different markets of developing countries. Based on the previous results, the following hypothesis is proposed:

H_2: Corporate image has a statistically significant and positive influence on consumer attitudes toward local/global brands.

The emergence of social media has changed the way in which attitudes towards companies are created and spread in the public (Etter et al., 2019). However, the relation between marketing activities on social media and the image of the company has not been sufficiently examined. Marketing communication has a crucial role in the process of building the image of a company. This relationship was analyzed in few studies, although to an insufficient extent (Baruk & Wesołowski, 2021; Jędrzejczyk & Brzeziński, 2021). Baruk and Wesołowski (2021) analyzed the importance of different social media marketing activities, which are used in shaping the external image of a company. The aforementioned implies that the use of social media can have a positive effect on creating a positive corporate image. Therefore, the following hypothesis is proposed:

H_3: Social media marketing activities have a statistically significant and positive influence on corporate image of local/global companies.

For the purpose of this research, and as a theoretical foundation, Theory of Reasoned Action-TRA (Ajzen & Fishbein, 1980), and the Theory of Planned Behaviour – TPB (Ajzen, 1991) were applied. These theories imply that attitudes impact behavioural intentions, and that the actual behaviour is determined by these intentions. Attitudes refer to "positive or negative feelings (i.e. affective judgment) that a person has in relation to target behavior" (Fishbein & Ajzen, 1975, p. 216). Based on the previous theoretical claims, the hypotheses which refer to consumer behavior are proposed:

H_4: Attitudes have positive and statistically significant influence on consumer purchase intentions toward local/global brands.

H_5: Purchase intentions have positive and statistically significant influence on consumer purchase of local/global brands.

2.3. Moderating effects of consumer openness to foreign cultures through traveling

Consumer openness to foreign cultures is the state of a person's desire or ability to engage in other cultures, accepting them fully and without prejudice (Nijssen & Douglas, 2008). Individuals oriented in this way are characterized by an open attitude towards foreign cultures and they are ready to analyze and gain new knowledge from them, usually through traveling and interacting with other cultures. Their motivation to understand and learn from foreign cultures differentiates them from people who only feel a sense of belonging to a specific country and its culture (Weij et al., 2015). Considering that these consumers are characterized as those who orientate themselves outside their home community and perceive themselves as citizens of the world and not of a specific nation (Cannon & Yaprak, 2002), it can be expected that this characteristic has a positive effect on attitudes and intentions consumers have regarding the purchase of global brands. This assertion has been confirmed in numerous studies (Han, 2017; Srivastava & Balaji, 2018; Zeugner-Roth et al., 2015). Inferring from these statements, it can be assumed that consumers who are open to foreign cultures may show less preference for these brands from their own countries, i.e. local brands. Because they like to travel and explore different cultures, for these consumers, local brands do not contain the symbolic benefit that allows them to experience the diversity of foreign cultures to the extent that global brands do.

Studies in which consumer openness to foreign cultures is analyzed in the context of the online environment are rare. Study by Tran (2020) has shown that consumer openness to foreign cultures positively moderates the relationship between the perceived effectiveness of social media platforms and purchase intentions, as well as the relationship between online trust in brand and purchase intention. Therefore, the following hypothesis can be proposed:

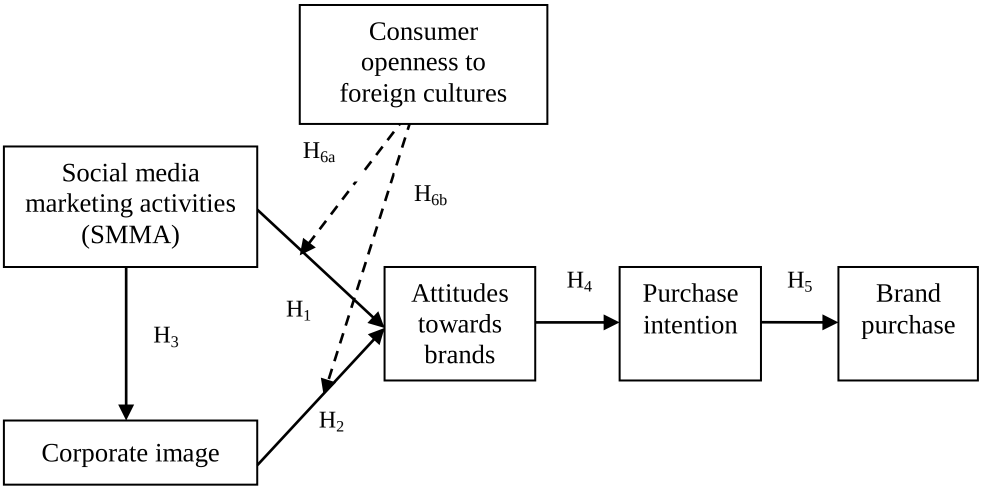
H_{6a}: Consumer openness to foreign cultures has a moderating effect on the relationship between SMMA and consumer attitudes toward local/global brands.

Furthermore, this study assumes that consumer openness to foreign cultures is a moderator in the relationship between the corporate image of brands and attitudes consumers have regarding the brands. To the best of our knowledge, this moderating effect has not been tested in any previous research. This leads to the following hypothesis:

H_{6b}: Consumer openness to foreign cultures has a moderating effect on the relationship between corporate image and consumer attitudes toward local/global brands.

Figure 1 shows the conceptual model of this study, with all variables and hypotheses.

Figure 1: Conceptual model of research



Source: Authors' research

3. Methodology

In order to test hypotheses from the established model, we conducted an empirical survey. In total, 372 questionnaires were collected. The largest percentage of participants in the sample are women (54.7%), and respondents who belong to the younger and middle-age generation. Also, the largest number of participants has secondary education (55.2%). The surveys were collected in May and June 2022, covering the territory of the City of Kragujevac and Central Serbia. Respondents were interviewed personally, and the statements on the surveys were graded from 1 to 7 on Likert scale (1 - strongly disagree, and 7 - strongly agree).

Statistical analyses were performed using the SPSS (v. 23.0) and AMOS 23. First, we examined the validity of research models using the confirmatory factor analysis (CFA) and by analyzing adequate indicators. Then, we used structural equation modeling (SEM) to test the hypotheses of the research, by analyzing the relationships in the models, between the variables. Finally, we tested the moderating effect between the variables, in selected relationships of the model.

The variables and associated statements in the models were obtained from previous scientific studies and adapted for this study. The questions related to the social media marketing activities were taken from scientific studies authored by Yadav and Rahman (2017), as well as Seo and Park (2018). Statements related to corporate image were taken from studies authored by Kim et al. (2017), Foroudi et al. (2014) and Lee and Lee (2018). Statements concerning consumer attitudes about brands were taken and adjusted according to studies by Alden et al. (2006) and Herz and Diamantopoulos (2017). Variable concerning consumer intentions was obtained from studies by Sharma (2011) and Zeugner-Roth et al. (2015). Variable which relates to purchase of brands, was taken from a study by Dimofte et al. (2010). All previous variables were adapted for both local and global brands and companies. Finally, statements related to consumer openness to foreign cultures were taken from studies by Cleveland (2007) and Cleveland et al. (2016).

4. Results and discussion

For research purposes, two research models related to local and global brands have been created. The validity analysis results are presented in Table 1. Indicator $\chi2$/df should have a value less than 3 (Bagozzi & Yi, 1988). Results indicate that both models fulfill this condition. Indicators IFI, CFI and TLI should have a value above 0.9 (Byrne, 1998). Presented results show that both models have adequate values of mentioned indicators. Finally, indicator RMSEA should have a value less than 0.08 (Hair et al., 2006), which both models fulfill.

Table 1: Validity analysis

Fit indices of measurement model	**Measurement model – Local brands**	**Measurement model – Global brands**	**Recommended value**
$\chi2$/df	2.831	2.960	<3
GFI	0.959	0.953	>0.9
IFI	0.982	0.979	>0.9
TLI	0.977	0.972	>0.9
CFI	0.982	0.979	>0.9
RMSEA	0.042	0.047	<0.08

Source: Authors' research

Results of the confirmatory factor analysis are presented in the Table 2. Value of the average variance extracted (AVE) indicator should be higher than 0.50, which represents the recommended value (Fornell & Larcker, 1981). All variables in both models fulfill this condition, and this indicates that models satisfy the conditions for convergent validity. Additionally, composite reliability (CR) indicator should have value higher than 0.7 (Fornell & Larcker, 1981). Results show that all variables meet this condition, since they have higher values than the recommended one. Recommended value for the Cronbach's alpha coefficient is 0.7 (Nunnally, 1978). Presented results indicate that all analyzed variables have adequate values.

Table 2: Confirmative Factor Analysis (CFA)

Variables and items	**Local brands / Companies**	**Global brands / Companies**
Social media marketing activities (SMMA)	AVE=0.626 CR=0.868 α=0.871	AVE=0.627 CR=0.867 α=0.868
The activities of companies on social networks are a good source of information about them.	0.883	0.877
The activities of companies on social networks are a good source of up-to-date information about their brands.	0.910	0.929
Social networks of companies are fun and have interesting content.	0.675	0.735
Using social networks of companies enables interaction with companies.	0.664	0.580
Corporate image	AVE=0.714 CR=0.88 α=0.883	AVE=0.676 CR=0.862 α=0.864
In general, I have a good opinion and impressions about local/global companies operating in Serbia.	0.851	0.845
In my opinion, local/global companies in Serbia have a good image among consumers.	0.841	0.782
Local/global companies in Serbia perform their business activities in a good and fair way.	0.843	0.838
Consumer attitudes towards local/global brands	AVE=0.770 CR=0.931 α=0.905	AVE=0.802 CR=0.942 α=0.908
I think local/global brands have good quality.	0.836	0.812
I have a positive opinion about local/global brands.	0.893	0.873
I like local/global brands.	0.880	0.924
Buying and using local/global brands brings me pleasure.	0.900	0.966
Consumer intentions towards buying local/global brands	AVE=0.603 CR=0.857 α=0.868	AVE=0.700 CR=0.903 α=0.896
I will probably buy local/global brands in the near future.	0.843	0.872
I plan to buy local/global brands for most of my needs in the near future.	0.813	0.824
I will probably try local/global brands in the future if I do not buy them now.	0.638	0.772
I will strongly recommend the purchase of local/global brands to others.	0.795	0.874
Purchase of local/global brands	AVE=0.734 CR=0.847 α=0.842	AVE=0.777 CR=0.874 α=0.866
I often buy local/global brands.	0.883	0.933
I purchase more local/global brands than global/local brands.	0.830	0.827

Consumer openness to foreign cultures through traveling	AVE=0.736 CR=0.933 α=0.938	AVE=0.736 CR=0.933 α=0.938
When traveling, I enjoy watching people from foreign cultures to learn something new from them.	0.840	0.838
It interests me to learn more about people living in foreign countries.	0.870	0.869
I enjoy exchanging ideas with people from foreign cultures and countries when traveling.	0.930	0.931
I enjoy learning about different ways of life, through traveling.	0.854	0.858
I like to spend time with people from foreign countries when traveling, to find out more about their unique views to life.	0.789	0.790

Source: Authors' research

In order to analyse the relationships between the variables, structural equation modeling (SEM) was used. Results of this analysis are shown in the Table 3, and based on them, various conclusions can be made. Social media marketing activities have positive effect on consumer attitudes about local brands (β=0.272, p<0.001), and global brands (β=0.209, p<0.001). These results indicate that hypothesis H_1 is supported in the case of both local and global brands. Similarly, corporate image has positive effect on consumer attitudes toward both local (β=0.530, p<0.001) and global brands (β=0.597, p<0.001). Therefore, hypothesis H_2 is fully supported in the case of both types of brands. Finally, SMMA has a very strong and positive impact on the image of the local companies (β=0.565, p<0.001), as well as the global ones operating in Serbia (β=0.529, p<0.001). This indicated that hypothesis H_3 is supported in the case of both local and global brands.

Table 3: SEM analysis

	Relationship	**Local brands**	**Global brands**	**Hypothesis testing**
H_1	Social media marketing activities (SMMA) → Attitudes toward brands	0.272***	0.209***	Supported
H_2	Corporate image → Attitudes toward brands	0.530***	0.597***	Supported
H_3	Social media marketing activities (SMMA) → Corporate image	0.565***	0.529***	Supported
H_4	Attitudes towards brands → Intentions towards buying brands	0.866***	0.839***	Supported
H_5	Intentions towards buying brands → Purchase of brands	0.871***	0.905***	Supported

Notes: *p<0.1; **p<0.05; ***p<.001, ns - not significant
Source: Authors' research

Consistent with the Theory of Reasoned Action, attitudes toward brands have strong impact on the intentions toward buying both local (β=0.866, p<0.001) and global brands (β=0.839, p<0.001). Therefore, hypothesis H_4 is supported in the case of both types of analyzed brands. Furthermore, intentions toward buying brands have strong effect on the purchase of both local brands (β=0.871, p<0.001), and global ones (β=0.905, p<0.001). This shows full support for hypothesis H_5 in the case of both local and global brands.

After SEM, the analysis of the moderating influence of the consumer's openness to foreign cultures on the selected relationships was performed. Results are presented in Table 4.

Table 4: Testing the relationships between variables (SEM) – Interaction effects

	Selected relationships (Dependent variable: Attitudes towards brands)	**Local brands**	**Global brands**	**Hypothesis testing**
$\mathbf{H_{6a}}$	Social media marketing activities (SMMA) × Consumer openness to foreign cultures	-0.025^{ns}	0.040^{ns}	Not supported
$\mathbf{H_{6b}}$	Corporate image × Consumer openness to foreign cultures	-0.061^{**}	0.058^{**}	Supported

Notes: *p<0.1; **p<0.05; ***p<0.001, ns - not significant
Source: Authors' research

The analysis showed that this characteristic of consumers has no statistically significant influence on the relationship between SMMA and consumer attitudes towards local (β=-0.025, p - not significant) and global brands (β=0.040, p - not significant). Therefore, hypothesis H_{6a} has not been supported. Conversely, consumers' openness to foreign cultures has a statistically significant influence on the relationship between corporate image and consumer attitudes concerning local (β=-0.061, p<0.05) and global brands (β=0.058, p<0.05). These results indicate that hypothesis H_{6b} has been supported in this research.

The conducted analysis led to numerous results. Firstly, SMMA influences positively attitudes that consumers have toward local and global brands. This result corresponds to the results of previous studies (Berthon et al., 2012; De Vries et al., 2012; Gao et al., 2018; Hatzithomas et al., 2016; Johnston et al., 2018; Makri et al., 2019; Morra et al., 2018; Okazaki & Taylor, 2013), which proved a positive influence of SMMA on various aspects of consumer behavior related to local and global brands. Global companies have increased the use of social media as a tool for branding and advertising, since users of social media are ready to participate in social networks and share information (Johnston et al., 2018; Okazaki & Taylor, 2013). Our results show that local companies should focus a lot of attention on their marketing activities on social media. That way, they will be able to respond to the marketing efforts of global companies, bearing in mind the statistical significance of the influence of this variable on brand attitudes.

Results of our research indicate that the image of companies has very strong and positive influence on consumer attitudes concerning brands, both local and global. Our findings are in agreement with previously conducted studies (Heinberg et al., 2018; Omar et al., 2009; Wilkins & Huisman, 2014; Zhang et al., 2019). The achieved results show that corporate image is a better predictor of consumer attitudes, than SMMA, regarding both local and global brands. International and global companies should have a positive corporate image when they plan to enter a foreign market (Zhang et al., 2019). Given the fact that corporate image is effective tool to reduce uncertainty that consumers may have about brands, it can increase product brand equity, especially in emerging markets (Heinberg et al., 2018). Therefore, global companies in Serbia should rely on communication strategies in building their corporate image. However, in order to keep pace with foreign competition, local companies must also build a positive image, since it is a significant tool for obtaining other important resources (like customers and employees) that can be crucial for business success.

A significant conclusion of the research is the connection between SMMA and the corporate image. Namely, the research showed that SMMA has very strong and positive effect on the corporate image. This result is very significant, given that this relationship has not been analyzed sufficiently in the literature (Baruk & Wesołowski, 2021; Jędrzejczyk & Brzeziński, 2021). Although it has been previously proven that social media influences positively brand image (Yang et al., 2022), our research confirms the influence that these media have on the corporate image. Nowadays, organizations see social media as a tool which can be used to build corporate image, promote and sell products, create a customer base, conduct word-of-mouth marketing, and build a community around the company (Jędrzejczyk & Brzeziński, 2021). This indicates that social media is taking precedence in the formation of corporate image in the age of digitalization (Etter et al., 2019).

Consumer attitudes have positive effect on consumers' intentions to buy local and global brands. Similarly, intentions to purchase brands influence positively the actual purchase of local and global brands. These results indicate that the use of the Theory of Reasoned Action in this research is justified (Ajzen & Fishbein, 1980; Riefler, 2012).

When it comes to the interaction effect that consumer openness to foreign cultures has on the relationships within the model, the results are different in relation to the brand origin and observed relationship. Specifically, consumer openness to foreign cultures does not have a statistically significant moderating influence on the relationship between SMMA and consumers' attitudes concerning local and global brands. These results are contrary to the results of a study conducted by Tran et al. (2020), which can be explained by the moderate level of consumer openness to different cultures of respondents in this study. Specifically, Tran et al. (2020) showed that a high level of this trait has a positive effect on the intention to purchase in an online environment. Given that the value of the arithmetic mean for our sample is 4.86, we can conclude that a moderate level of this consumer characteristic does not create interaction effect on the relationship between SMMA and brand attitudes. Conversely, consumer openness to foreign cultures has a statistically significant moderating effect on the relationship between the corporate image and consumers' attitudes toward local and global brands. This interaction effect is negative in the case of local brands. A negative sign before the coefficient of the moderation effect indicates that consumer openness to foreign cultures weakens the positive relationship between corporate image and attitudes toward local brands. This implies that the consumer's openness to foreign cultures can direct the consumer to purchase global brands rather than local ones, considering that it has a negative effect on the previously mentioned relationship. As expected, in the case of global brands, the interaction effect is positive. The positive sign before the moderation coefficient implies that with the increase of consumer openness to foreign cultures, positive relationship between corporate image and attitudes toward global brands is strengthened. This result implies that consumers who are open to foreign cultures are a particularly important segment for global companies, and that promotional efforts should be directed at these consumers.

5. Conclusion

The stated results of the current study may have immense theoretical and practical contributions. Namely, bearing in mind the presence of both local and global companies in many markets, in both product and services categories, it is of utmost importance to understand the behavior of consumers when choosing brands in the purchasing process. The currnt research aimed to explore and analyze the effect of corporate image and social media on consumer behavior, as well as the interaction effects of consumer openness to foreign cultures on the relationships analyzed in the model.

This research has shown that SMMA and corporate image have a strong and positive effect on attitudes that consumers have regarding both local and global brands. Furthermore, our study has demonstrated that SMMA has a significant impact on the corporate image of local and global companies. Finally, we found positive interaction effects of consumer openness to foreign cultures on the relationship between corporate image and consumer attitudes concerning global brands, and a negative interaction concerning local brands.

The implications of this study are multiple, especially for business activities of local and global companies, including tourism sector and the companies within it. These implications primarily relate to communication strategies and strategies concerning customer relationship management, as well as choosing the right market segments. Companies should focus their attention on social media marketing activities, since social media and networks have revolutionized the roles of both consumers and businesses in the modern business environment. More importantly, these activities are taking precedence when it comes to the formation of corporate image in the digital era. Finally, global companies should target consumers who are open to foreign cultures, like to travel, and appreciate different values and lifestyles from their own, in their communication strategies.

Nowadays, social media play an important role, as part of marketing activities, in many industries, including tourism. Consumers very often analyze companies' social media and look for online reviews when purchasing numerous products, especially services (Kocić et al., 2022). This is especially important in the tourism sector and companies within it, since consumers can use social media to analyze and choose tourist offers, such as destinations and hotels, analyze reviews of other consumers and communicate with tourist companies (Sofronijević & Kocić, 2022). Social media can help companies in the tourism sector to interact with potential consumers, both domestic and foreign, and thus impact their attitudes towards brands and companies in general. Our research has confirmed that social media marketing activities positively influence the image of the company and consumers' attitudes towards brands. Therefore, companies in the tourism sector can benefit from social media, through their influence on consumer behavior, loyalty and purchase (Popović, 2022).

A particularly important group of potential consumers in tourism sector are consumers who are open to foreign cultures. Since these consumers are eager to explore and learn about new countries and their cultures, they travel often to satisfy those needs. Attracting these consumers by companies from the tourism sector in Serbia can bring numerous benefits, including financial ones. Many companies from this sector, such as hotels and restaurants, can target and attract foreign tourists in their business activities. This task can be easier for global companies operating in Serbia (for example, foreign franchises of hotel chains and restaurants, such as Hilton hotels, McDonald's, etc.), due to their global, good image, high standards of quality, and consumers' familiarity with the brand. For these reasons, and to reduce insecurity, some foreign tourists will use the products and services of these companies, wherever they travel to. Our research has confirmed that consumers' openness to foreign cultures will increase the influence of corporate image on their attitudes towards global brands, which can be of great importance for global companies operating in the tourism sector in Serbia. In addition, domestic tourists who are open to foreign cultures may want to consume products and services of global companies in Serbia. These tourists represent an important segment of potential customers for global companies in tourism sector.

On the other hand, local tourism companies can attract foreign tourists with their unique and traditional offer compared to the offer of global companies, which can fulfill the wishes of these tourists in terms of learning about new cultures, in this case Serbian. However, these companies may face the problem of the unfamiliarity of foreign tourists with their image, offer and the quality of products and services. Our research has shown that consumers' openness to foreign cultures negatively moderates the influence of corporate image on their attitudes towards local brands, which can be an obstacle in attracting tourists for local tourism companies. Precisely because of this, local companies must invest resources in their marketing campaigns, in order to improve their image, consumer familiarity with their brands and the perceptions about quality of products and services. These efforts can also lead to the attraction of domestic tourists who are generally more open to foreign cultures.

The presented research has certain limitations. Firstly, respondents were surveyed mostly in the City of Kragujevac and the region of Central Serbia. Future approaches should include respondents from other cities and regions, and conducting the research in two or more countries. In addition, an important limitation of the conducted research is related to the variables which are incorporated in the research model. Namely, the research includes the SMMA and corporate image, and consumer openness to foreign cultures through traveling, as a moderating variable. Future studies could incorporate different variables, which are relevant for the behavior of consumers concerning purchase of global and local brands.

Conflict of interest

The authors declare no conflict of interest.

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Employee training and hotel business performance: The moderating effect of organizational commitment

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Abstract: Employee training is an important tool for improving the knowledge, skills, and competencies of employees in the labor-intensive hotel industry. Through employee training, the efficiency and effectiveness of employees' work are improved, which leads to better business performance. The aim of this paper is to analyze the contribution of employee training to hotel business performance and the moderating effect of organizational commitment on this relationship in a developing country – the Republic of Serbia. The sample includes 83 hotels. Employee training is observed through the following components or dimensions: availability of training, motivation to learn, support from training, and benefits of training. The paper uses regression analysis to test the set research hypotheses. The results show that all components of employee training affect hotel business performance, while the moderating effect of organizational commitment on this relationship has not been proven.

Keywords: employee, training, performance, organization, organizational commitment, hotel industry
JEL classification: M53, L25, E24

Obuka zaposlenih i poslovne performanse hotela: Moderirajući efekat organizacione posvećenosti

Sažetak: Obuka zaposlenih je značajno sredstvo usavršavanja znanja, veština i kompetencija zaposlenih u radno-intenzivnoj, hotelskoj industriji. Kroz obuku zaposlenih unapređuje se efikasnost i efektivnost rada zaposlenih, što vodi ka boljim poslovnim performansama. Cilj istraživanja jeste da se istraži doprinos obuke zaposlenih poslovnim performansama hotela, kao i moderirajući efekat organizacione posvećenosti na ovu vezu u Republici Srbiji kao zemlji u razvoju. Uzorak obuhvata 83 hotela. Obuka zaposlenih posmatra se na osnovu odgovarajućih komponenti ili dimenzija: dostupnost programa obuke, motivacija za učenje, podrška nadređenih i koristi od obuke. Testiranje istraživačkih hipoteza vrši se primenom regresione analize. Rezultati istraživanja pokazuju da sve komponente obuke zaposlenih utiču na poslovne performanse hotela, dok moderirajući efekat organizacione posvećenosti na ovu vezu nije potvrđen.

Ključne reči: zaposleni, obuka, performanse, organizacija, organizaciona posvećenost, hotelska industrija
JEL klasifikacija: E53, L25, E24

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1. Introduction

The growth and development of the hotel business are based on human resources, which are important for improving the efficiency of all hotel activities (Ognjanović et al., 2022). The expansion of the global economy and technology and the need for hotels to permanently develop innovations require constant training and education (Ocen et al., 2017). Through the training process, employees acquire specific skills in order to correct deficiencies that occur when performing work (Ocen et al., 2017). Formal training, an environment that encourages learning and work practices combined with employees' commitment shapes the workforce competence (Islam & Amin, 2022). For Bashir and Long (2015), employee training is a sign of recognition of employees' contribution to the organization's business success, which results in the creation of motivated, talented, and committed employees. Training and other actions for developing practical skills are important for managers and other employees in establishing a balance between their work and life (Mladenović & Krstić, 2021). Organizational commitment (OC) potentially creates better work performance and a lower turnover rate (Rawashdeh & Tamimi, 2020), as well as other business performances of an organization.

Difficulties in maintaining employee stability, increasing OC, and increasing competitiveness have become real challenges faced by organizations in the new employment background (Ling et al., 2014). The dynamic nature of the business environment means that organizations cannot simply respond to changes in the market, so the only solution for the growth of business success and high flexibility in such conditions is the development of dynamic capabilities. Through the improvement of employees' knowledge, skills, and abilities, the management of a business organization views employee training as a key tool for the growth of return on investment (Hughey & Mussnug, 1997), and innovation (Bashir & Long, 2015). In this way, employee training is one of the important tools for acquiring and maintaining a competitive advantage of the organization (Rawashdeh & Tamimi, 2020).

Despite the proven contribution of employee training to organization operations, the literature points to certain problems. First, the lack of awareness of owners and managers about the benefits that can be gained from employee learning and development leads to the fact that few managers view employee training as a management tool (Panagiotakopoulos, 2020). Second, most employees are concerned about the lack and insufficient investment in training and development due to the pandemic crisis caused by Covid-19 (Jayathilake et al., 2021). The Covid-19 pandemic has changed the form and methodology of employee training, since during the pandemic there were a large number of layoffs, budget cuts, and termination of contracts with trainers in the hotel industry (Mikołajczyk, 2022). Such shortcomings are particularly characteristic of developing economies, such as the Republic of Serbia. For the above reasons, it is necessary to develop the awareness of hotel owners and managers as to how important training in crisis and regular conditions is for the hotel business.

The following research gaps were noted in the literature. First, research on the importance of employee training in hotels is modest and partly outdated (Amin et al., 2017; Avcikurt, 2003; Malek et al., 2018; McColl-Kennedy & White, 1997). In addition, previous studies did not analyze employee training through its respective components, but only as an independent variable. The study seeks to fill this gap through a more detailed analysis of employee training through appropriate components such as availability of training, motivation to learn, support from training, and benefits of training.

Second, as previous studies show, companies with developed "training programs have improved performance in a number of areas including revenues, profitability, employee relations, quality, and productivity” (Panagiotakopoulos, 2020, p. 247). That is why it is necessary to investigate the contribution of employee training (and its components) to the business performance of hotels. Investing in employee training can be justified by the contribution it makes to business performance, but the literature has not indicated possible difficulties in defining causality between training and business performance of an organization (Newman et al., 2011). This conclusion is also supported by Panagiotakopoulos (2020) since he states that the relationship between employee training and business performance is not the clearest and therefore more empirical work is necessary to better understand this lack. Based on this, the study focuses on analyzing the contribution of employee training components to the business performance of a hotel as a business organization.

Third, the study examines OC in developing countries (Serbia), which is still not sufficiently researched. Most studies on OC come from Western studies, while little is known about OC outside the West (Newman et al., 2011).

Fourth, previous studies indicate a direct relationship between training and the OC of employees (Bashir & Long, 2015; Ling et al., 2014; Maurer & Lippstreu, 2008; Rawashdeh & Tamimi, 2020). A positive relationship between training components and OC leads to such an employee being more interested in staying with the organization and contributing to business success (Rawashdeh & Tamimi, 2020). Therefore, it is necessary to investigate whether OC moderates the relationship between employee training and the performance of a business organization, which has not yet been sufficiently investigated in the literature. Accordingly, the aim of the research is to analyze the contribution of employee training to hotel business performance and the moderating effect of OC on this relationship in the Republic of Serbia. The contribution of the study is as follows.

First, employee training is observed through four components, thus more comprehensively monitoring the contribution of this variable to the hotel business performance. In this way, assessing which training component contributes most significantly to the hotel business performance is possible. The selection of training components is in line with the recommendations (Rawashdeh & Tamimi, 2020) that future research should include other, additional training components – such as motivation to learn and co-worker support for training. In addition, studies mostly analyze what is expected from training, while little attention has been paid so far to what employees see as important in evaluating training and development (Pernkopf-Konhäusner & Brandl, 2011).

Second, the study uses a qualitative approach to assess training components, business performance, and OC. This is in line with Rawashdeh and Tamimi’s (2020) recommendations that future research examines the relationships between training variables using interviews.

Third, the study analyzes the contribution of employee training components to the hotel business performance, which fills the observed research gap and provides a contribution to an under-researched issue in developing countries.

Fourth, the paper investigates whether OC moderates the relationship between employee training and hotel business performance, which previous research has not analyzed in detail, especially not in the hotel industry.

According to the defined research aim and observed research gaps, the study should answer the following research questions:

1. Which of the components or dimensions of employee training is the most developed in the observed hotels?

2. Do the employee training components contribute to the hotel business performance?
3. Is OC moderating the relationship between employee training components/dimensions and the hotel business performance?

2. Background

2.1. Employee training in the hotel industry

Employee training is a planned effort by the hotel to improve the process of acquiring knowledge, skills and abilities of employees in order to work more efficiently (Došenović & Zolak Poljašević, 2021). As a key activity in the development of human resources (Berber & Lekovic, 2018), training refers to the systematic activities of developing and improving the skills, knowledge, and behavior of employees in order to enable them to perform jobs, perform specific tasks, and meet quality requirements for the future (Ling et al., 2014). Other authors view training as a vital human resource management practice that changes the behavior of employees in a direction that enables the hotel business goals to be achieved (Ocen et al., 2017). Ocen et al. (2017) emphasize that the employer's support is needed in the process of implementing the training because in this way the training will be more effective. Employers are the ones who define the need for training and develop awareness among employees about how important training is both for employees and the organization. The issue of employee training is particularly important for small and medium-sized hotels where employee turnover is high. Employee training is one of the benefits that can keep employees in hotels and at the same time increase their work efficiency and impact the financial results of the hotel.

Through training and development, the skills of employees are enriched and add value to the hotel, maximizing overall productivity and profitability (Bashir & Long, 2015; Ta'Amnha et al., 2023). Employee training has specific goals in three areas (Mikołajczyk, 2022): increasing the individual productivity of employees through increasing competencies (a), increasing added value through the use of new systems (b), creating future value through the development of employee expertise and potential (c). The analysis of the contribution of training and development determines how the hotel's business knowledge, abilities, and skills are nurtured and maintained (Abugre & Nasere, 2020). In that process, the management also plays an important role, which must provide support to employees for the implementation of training: by providing resources, work rules, and an adequate reward policy (Maurer & Lippstreu, 2008). The benefits of training can be summarized in the following: efficiency and achievement of organizational goals by changing employees' attitudes, behaviors, and skills (Ling et al., 2014); retaining employees, increasing labor productivity, screening the internal labor market, strengthening organizational culture (Pernkopf-Konhäusner & Brandl, 2011).

There are two ways of measuring training: one measures training practice and the other evaluates an organization's training policy (Ling et al., 2014). However, an organization's training policy from the employee perspective is widely evaluated in the literature (Ling et al., 2014). A detailed training evaluation implies an analysis of employee training through appropriate components or dimensions. The following dimensions of employee training are analyzed in the literature: "availability of training, motivation to learn, co-worker support for training, supervisor support for training, and benefits of training" (Bashir & Long, 2015, p. 1227); "perceived availability of training, perceived support for training and perceived benefits of training" (Rawashdeh & Tamimi, 2020, p. 191); "training will, training opportunities, training benefits and supervisor support for training" (Ling et al., 2014, p. 164); motivation to learn, perceived availability of training, perceived co-worker support for training, perceived supervisor support for training and perceived benefits from training (Newman et al., 2011).

Based on previous studies, employee training includes the following components:

a) availability of training,
b) motivation to learn,
c) support from training, and
d) benefits of training.

The choice of variables is consistent with the observation of the components of employee training in previous research. In addition, the selected variables of employee training take into account the individual needs of employees (Pernkopf-Konhäusner & Brandl, 2011) and are evaluated from the perspective of employees (Ling et al., 2014), which is of great importance for the hotel as a labor-intensive industry.

Availability of training refers to the degree to which employees can access the training programs provided by the hotel (Newman et al., 2011; Rawashdeh & Tamimi, 2020). This dimension monitors the effective participation of employees in training programs (Rawashdeh & Tamimi, 2020).

The motivation to learn represents the specific desire of the employees to study the content of the training program (Bashir & Long, 2015). Employees who have no motivation to learn will fail to learn the training content (Bashir & Long, 2015).

Supervisor support for training is essential for creating "a successful work environment for the development of the firm and its employees and has fundamental implications for organizational effectiveness" (Rawashdeh & Tamimi, 2020, p. 195). When there is a strong emotional connection between employees and supervisors, employees become more motivated to complete the tasks (Bashir & Long, 2015).

Benefits from trainin*g* are contributions that the organization provides to employees through the training process. Benefis are most significantly "related to performance improvement, productivity, profitability, efficiency, effectiveness" (Rawashdeh & Tamimi, 2020, p. 195), and employee retention (Bashir & Long, 2015). Such benefits also have an impact on hotel business performance.

2.2. Employee training, organizational commitment and hotel business performance

Theoretical support for the analysis of the relationship between employee training and hotel performance is provided by human capital theory and research (Veselinović et al., 2021). According to this theory, human capital represents a "key element that improves firm assets increases employee productivity, and gains a sustainable competitive advantage" (Mehreen & Ali, 2022, p. 530). Authors Bashir and Long (2015), when explaining the relationship between employee training and business performance, refer to the social exchange theory, according to which the positive attitudes and behaviors of employees are influenced by psychological contracts, which ultimately have an impact on the hotel's organizational performance.

Employee training

Employee training is a key factor in the growth of human capital productivity and hotel competitiveness since through training employees acquire knowledge that improves product/service quality as a result of improved production processes and systems (Ta'Amnha et al., 2023). Through attending the training program, an increase in the efficiency of the employees' work, greater job satisfaction, labour productivity, and profitability are ensured (Hughey & Mussnug, 1997). The essence of investing in employee training is that you can get more from workers if you give them more (Lorenzet et al., 2006).

The task of management is to contribute to the understanding of the importance of training among employees and they need to know what is "good performance" and how their results are measured/compared against the standard (Lorenzet et al., 2006). However, employee commitment to training is often difficult to achieve as small hotels may lack managerial expertise, preventing them from focusing on human capital issues (Lorenzet et al., 2006).

Organizational commitment

Organizational commitment is the attachment of employees to the business organization. More precisely, it is a view of an employee towards his or her attachment to the organization. OC represents "the relative strength of an individual's identification and involvement in a particular organization" (Ocen et al., 2017, p. 743). Organizational commitment measures the level of employee loyalty to employers.

Employees expect to receive training and development in exchange for OC (Newman et al., 2011), which is consistent with the social exchange theory (Bashir & Long, 2015). Improving the OC of employees is the main training goal (Ling et al., 2014). By organizing training, the organization shows its commitment to employees, which leads to employees strengthening their commitment to the organization. The result of mutual commitment is high productivity and good organizational (business) performance (Newman et al., 2011; Samuel & Nurudeen, 2014). In order to better evaluate the effectiveness of the training, Newman et al. (2011) suggest examining the relationship between training and OC, since previous research has linked commitment to organizational effectiveness. Some of the indicators of the hotel's long-term orientation toward employee development are the availability of training programs and investments in employees (Berber & Lekovic, 2018).

Hotel business performance

Performance management is a set of managerial methodologies that enable managers to achieve organizational goals (Ta'Amnha et al., 2023). Hotel performance management is a process of planning, measuring (controling), analysing, reporting and improving hotel's performance (Krstić, 2022).

Generally, business performance is defined as a set of characteristics, attributes, and indicators that describe certain economic resources (inputs), results (outputs), outcomes, contributions, economic efficiency, effectiveness, etc.

Business performance indicators may be financial and non-financial. Financial business performance indicators are "lagging performance indicators, which represent the outcome of past actions and management actions that took place in the past, but they say nothing about the generating causes of those managerial activities, and of the consequent organisational performance of the company" (Panno, 2020, p. 137). Financial business performance indicators do not include corporate/enterprise "efforts to constantly improve quality of products and services to enhance customer satisfaction" so non-financial aspects that form the basis of operating results should be calculated using non-financial indicators (Panno, 2020, p. 137). Generally, non-financial business performance indicators (employee competences, intellectual resources, customer loyalty, employee satisfaction, etc), have proven to be leading performance indicators. Moreover, non-financial business performance metrics provide little information useful for effective strategic planning by managers (Panno, 2020), which can be outlined as their limitation in managerial purpose.

Business performance can be measured and monitored at the enterprise level, organisational units level, process/activity level, group/team level, and individual (personal, employee) level (Krstić, 2022).

At the individual level, performance refers to individual (employee) contribution to the realisation of organisational goals, individual (personal) outcome, job satisfaction, individual effectiveness (goals achieved), and personal adjustment to a working environment. At the group level, performance refers to group or team result/outcome, morale, cohesion, labor efficiency or team productivity, etc. Finally, at the organization (hotel) level, performance refers to: revenue (total revenue per available room), costs (cost per ocupied room), profit (gross operating profit, EBITDA), economic value added (EVA), profitability rations (operating profit margine, EBITDA margine, return on equity, return on assets), labour/human productivity rations, market value (market capitalisation), and many other non-financial performance indicators of business success, such as average room rate, average leng of stay, adaptibility, absenteeism rate, turnover rate, green or environmetal performance of hotels, etc.) (Jovanović, 2019). Also, the performances indicate the ability to successfully achieve the future goals of the hotel as a business, for-profit organisation or enterprise. All the above-mentioned performance actually indicate the hotel's business success.

Literature provides modest results related to the connection between employee training and business performance. The relationship between employee training and business performance was confirmed in manufacturing companies (Ta'Amnha et al., 2023) and small Greece firms (Panagiotakopoulos, 2020). Renaud and Morin (2020) conclude that the training offer has an impact on the business performance of Canadian for-profit firms. However, this relationship has not been analyzed in the hotel industry so far. Studies have shown that employee training contributes to innovation performance (Berber & Lekovic, 2018), and sustainable business performance during the pandemic crisis (Deshpande & Srivastava, 2022). Other studies (Sutton & Atkinson, 2023) have shown that the relationship between business performance and training is not significant.

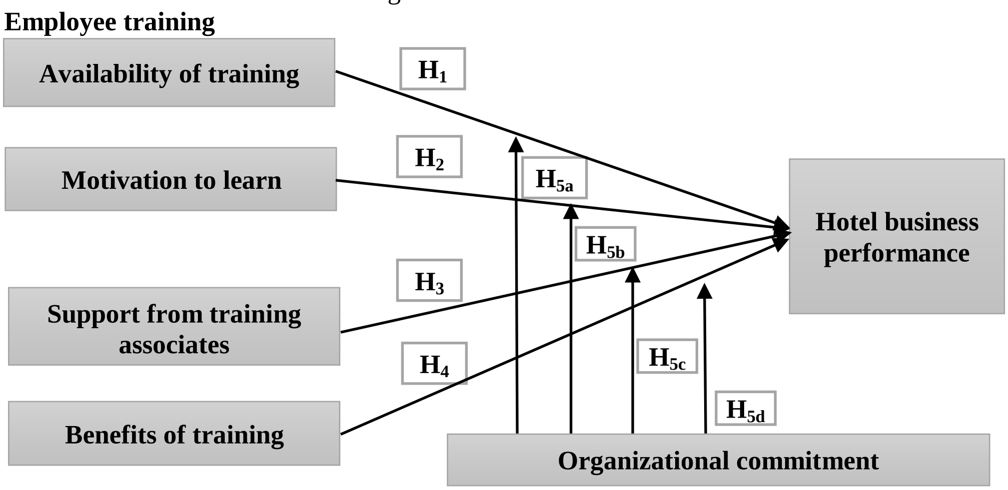
In addition, previous research shows that OC is associated with various business results - job performance (Chen et al., 2006) and job satisfaction (Rawashdeh & Tamimi, 2020). Ocen et al. (2017) explain the positive impact of training on the commitment of employees since employees tend to create experience, competencies, and knowledge, as well as to develop the feeling that employees must return the benefits to the employer. Saira et al. (2021, p. 310) concluded that "gender moderates the relationship between effective diversity training and affective commitment" in the manufacturing sector. None of the previous studies tested the moderating effect of employee commitment on the relationship between the training of employees and the business performance of hotels.

There was an academic debate among scholars about the relationship between training and employee commitment. Research (Bashir & Long, 2015; Ling et al., 2014; Maurer & Lippstreu, 2008; Newman et al., 2011; Rawashdeh & Tamimi, 2020) confirmed the positive relationship between employee commitment and training. Marić et al. (2021) concluded that employee commitment has a mediation effect on the relationship between CSR and firm performance.

3. Research model and hypotheses

The research model of this study is presented in Figure 1.

Figure 1: Research model



Source: Authors' presentation

Previous studies in the field of hotel industry did not analyze employee training through the appropriate components – availability of training, motivation to learn, support from training, and benefits of training (see Bashir & Long, 2015; Newman et al., 2011). In addition, employee training becomes a particularly important human resource management tool of the hotel industry as a labor-intensive activity in which employees are the key factors of business success. For the stated reasons, it is necessary to analyze the relationship between the components/dimensions of employees training and organizational performance in hotels based on the following hypotheses (Figure 1):

Hypothesis 1: *Availability of training positively contributes to hotel business performance;*
Hypothesis 2: *Motivation to learn positively contributes to hotel business performance;*
Hypothesis 3: *Support from training associates positively contributes to hotel business performance;*
Hypothesis 4: *Benefits of training positively contribute to hotel business performance.*

As organizational commitment is one of the key outcomes of training (Ling et al., 2014), it is necessary to test whether this variable can contribute to strengthening the relationship between the components/dimensions of employee training and the hotel's performance. For these purposes, the following hypotheses were defined (Figure 1):

Hypothesis 5a: *Organisational commitment moderates the relationship between the availability of training and hotel business performance;*
Hypothesis 5b: *Organisational commitment moderates the relationship between the motivation to learn and hotel business performance;*
Hypothesis 5c: *Organisational commitment moderates the relationship between the support from training associates and hotel business performance;*
Hypothesis 5d: *Organisational commitment moderates the relationship between the benefits of training and hotel business performance.*

4. Materials and measures

4.1. Data collection and sample description

The sample includes 83 hotels that were active in the market of the Republic of Serbia in 2022. The list of active hotels was taken from the Ministry of Trade, Tourism, and Telecommunications of the Republic of Serbia website (October 2022). The research focuses on the following hotel forms: garni hotels, hotels, and apart-hotels. Hotels in the form of motels, tourist resorts, guesthouses, and camps are not included in the research. Data were collected using a questionnaire. The questionnaire was sent to 332 e-mail addresses. Hotel employees were surveyed as authoritative evaluators of employee training and development programs (Pernkopf-Konhäusner & Brandl, 2011) and the hotel's business success. The data were collected according to the principle of one hotel - one employee to avoid data duplication. The survey was conducted online and by telephone.

The sample was observed from the aspect of category, number of employees, and ownership structure. Three-, four- and five-star hotels are included in the analysis, since these hotels have a larger number of employees for whom training programs are organized. The sample is dominated by four-star hotels (58.1%). Three-stars hotels make up 30.2% of the sample, while five-star hotels make up 11.6% of the sample. Observed according to the number of employees, hotels with the number of "employees from 10 to 49" are the most represented in the sample (62.8%). A slightly smaller percentage is made up of hotels that employ from "50 to 249 employees" (25.6%) as well as hotels that employ "up to 9 employees" (11.6%). In terms of ownership structure, the most represented hotels are owned by domestic investors (88.4%).

4.2. Measures

The variables were evaluated by a questionnaire. Respondents rated items for the previous year, 2022. Data on employee training as well as its components cannot be expressed in any other way than by the Likert scale. Organization performance of hotels or hotel's performance was also assessed in a qualitative way. Items were evaluated on the basis of a Likert scale of agreement from "1 - absolutely disagree" to "5 - absolutely agree".

The questionnaire includes four parts. The first part of the questionnaire contains questions on the basis of which general data on the hotel's operations are collected. The second part of the questionnaire includes items about employee training. This variable is observed based on four sub-variables: availability of training; motivation to learn, support of training associates, benefits of training. Items in the questionnaire for variable employee training were defined by studies Bashir and Long (2015); Noe and Wilk (1993); Newmana et al. (2011); and Rawashdeh and Tamimi (2020). The third part of the questionnaire contains items that evaluate the hotel business performance and are defined by Tseng and Lee (2014). In the questionnaire, respondents rated the following statements: "Our sales amount is very high"; "Our operating profit margin is very high"; "Our return on investment is very high". The fourth part of the questionnaire refers to the items used to examine OC, which are defined by Shepherd and Mathews (2000). In the questionnaire, respondents rated the following statements: "I make efforts to enable the hotel to achieve its goals and values"; "I consider the hotel to be the best choice and I want to stay there"; "I am loyal to the hotel and I want to continue working here".

5. Results

5.1. Descriptive statistics

The results of descriptive statistics are shown in Table 1. The benefits of training have the highest mean value (Mean = 4.548), while the availability of training has the lowest value mean (Mean = 3.793). The mean of hotel business performance is 3.936. Availability of training has the highest standard deviation value (St. Dev. = 1.115).

Table 1: Descriptive statistics

Variables	**Mean**	**St. Deviation**	**Kurtosis**		**Skewness**	
			Statistics	**St. Error**	**Statistics**	**St. Error**
Availability of training	3.793	1.115	0.336	0.493	-1.035	0.249
Motivation to learn	4.400	0.602	0.007	0.493	-0.921	0.249
Support from training associates	4.372	0.635	1.243	0.493	-1.143	0.249
Benefits of training	4.548	0.460	1.294	0.493	-1.285	0.249
Organizational commitment	4.500	0.544	0.810	0.493	-1.184	0.249
Hotel business performance	3.936	0.956	-0.516	0.493	-0.464	0.249

Source: Authors' research

The kurtosis values for the observed variables are positive in most cases, which means that the distribution is sharper than normal. The skewness values for the observed variables are negative, which means that most of the values of the dependent and independent variables are positioned so that they are closer to higher values. Testing the normality of the distribution was performed using the Kolmogorov-Smirnov test since the sample is larger than 50 observed hotels. For all observed variables, the value of sig. of this test is greater than 0.05, which means that the normality of the sample distribution is not supported.

5.2. Correlation analysis

Correlation analysis measures the degree of strength and direction of the relationship between variables in the model. Since the normality of the distribution has not been proven, Spearman's rho coefficient will be used to test the correlation (Table 2).

Table 2: Correlation analysis

Variables	Availability of training	Motivation to learn	Support from training associates	Benefits of training	Employee commitment	Hotel business performance
Availability of Training	1					
Motivation to Learn	0.786**	1				
Support from training associates	0.606**	0.677**	1			
Benefits of training	0.743**	0.747**	0.607**	1		
Organizational commitment	0.415**	0.533*	0.411**	0.467**	1	
Hotel business performance	0.482**	0.436**	0.430**	0.457**	0.345**	1
** Correlation is statistically significant on the level of 0.050* *** Correlation is statistically significant on the level of 0.000*						

Source: Authors' research

By observing the correlation between the components/dimensions of employee training, it can be concluded that there is a strong, positive, and statistically significant correlation between the components. The strongest correlation is between the availability of training and motivation to learn (ρ = 0.786; p = 0.000). OC achieves a medium, positive, and statistically significant correlation with the components of employee training. Hotel business performance also has a positive, statistically significant, and moderate correlation with the components of employee training. Hotel business performance has the strongest correlation with the availability of training (ρ = 0.482; p = 0.000), while the weakest correlation is with OC (ρ = 0.345; p = 0.001).

5.3. Reliability analysis

In order to test the reliability of the used items, reliability analysis and Cronbach's alpha coefficient are used. For the observed model, Cronbach's alpha coefficient is 0.869. This means that there is a high degree of reliability and consistency of the items since the value of this coefficient is greater than 0.7, which is the recommended minimum value (Nunnally, 1978).

Table 3: Reliability analysis

Variables	Value of coefficient Cronbach's alpha
Availability of training	0.841
Motivation to learn	0.821
Support from training associates	0.844
Benefits of training	0.844
Organizational commitment	0.854
Hotel business performance	0.877

Source: Authors' research

By observing the value of Cronbach's alpha coefficient for each variable individually, it can be concluded that this coefficient ranges from 0.821 (Motivation to learn) to 0.877 (Hotel business performance) (Table 3).

5.4. Multiple regression analysis

Conducting regression analysis requires multicollinearity testing via the Variance inflation factor (VIF). For all observed models, VIF ranges from 1.810 to 2.076, which is within acceptable limits - lower than 2.5 (Ramırez et al., 2021). These results do not indicate the problem of multicollinearity, i.e. there is no high correlation between the observed variables, which does not jeopardize the implementation of the regression analysis.

The set of regression analysis that tests the direct effect of the components of employee training on the hotel business performance is shown in Table 4. The results indicate that *Hypothesis H_1 is supported*, that is, availability of training positively contributes to a hotel business performance (β = 0.506, p = 0.000) (Model 1). It can be concluded that the availability of employee training is a significant factor in the hotel business success. These results are also supported by the results of the correlation analysis since the availability of training component has the strongest correlation with business performance (ρ = 0.482; p = 0.000). The R^2 coefficient is 0.256, which means that 26% of the variability of the hotel business performance is explained by the regression model, while the rest is influenced by other factors.

Motivation to learn positively contributes to hotel business performance (β = 0.504, p = 0.000), which means that hypothesis H_2 *is supported* (Model 2). The R^2 coefficient is 0.254, which means that 25% of the variability of hotel business performance is explained by the regression model, while the rest is influenced by other factors.

Table 4: Results of regression analysis

Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Availability of training	0.506** (5.630)			
Motivation to learn		0.504** (5.600)		
Support from training associates			0.437** (4.654)	
Benefits of training				0.514** (5.749)
n	83	83	83	83
F-value	31.702**	31.362**	21.659**	33.052**
R^2	0.256	0.254	0.191	0.264
Adj. R^2	0.248	0.246	0.182	0.256
Dependent variable: Hotel business performance				
*Significance: ** p ≤ 0.01; * p ≤ 0.05*				

Source: Authors' research

Hypothesis H_3 *is also supported*, which means that support from training associates positively contributes to the hotel business performance (β = 0.437, p = 0.000) (Model 3). This means that hotels that provide the support of supervisors and managers for the implementation of training tend to have better hotel business performance. The coefficient of determination R^2 is 0.191, which means that 19% of the variability of hotel business performance is explained by the model. Hypothesis H_4 *is supported* – benefits of training positively contribute to a hotel business performance (β = 0.514, p = 0.000) (Model 4). When training creates benefits for employees, the hotel tends to have better performance. The coefficient of determination R^2 is 0.260, which means that 26% of the variability of the hotel business performance is explained by the regression model.

Table 5 shows the results of the regression analysis where the moderating role of OC on the relationship between training components and hotel business performance was tested. OC positively contributes to the hotel business performance, except in Model 3. This is consistent with the research (Mansour et al., 2014) indicating that OC contributes to better performance on the organizational level.

Table 5: Results of regression analysis

Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Independent variables								
Availability of training	0.384** (3.647)	0.653 (0.896)						
Motivation to learn			0.389** (3.189)	1.056 (1.522)				
Support from training associates					0.285**(2.634)	0.251(0.411)		
Benefits of training							0.399** (3.504)	0.718 (1.202)
Moderator								
Organizational commitment	0.225*(2.136)	0.320 (1.161)	0.170 (1.397)	0.726 (1.248)	0.280**(2.582)	0.251(0.499)	0.184 (1.614)	0.571 (0.792)
Interactions								
Availability of training x OC		-0.332 (-0.373)						
Motivation to learn x OC				-1.125 (-0.977)				
Support from training x OC						0.055(0.057)		
Benefits of training x OC								-0.640 (-0.544)
n	83	83	83	83	83	83	83	83
F-value	18.745**	12.425**	16.819**	11.525**	14.828**	9.778**	18.117**	12.084**
R^2	0.292	0.293	0.270	0.278	0.246	0.246	0.285	0.287
Adj. R^2	0.276	0.269	0.254	0.253	0.229	0.221	0.269	0.263
Dependent variable: Hotel business performance								
*Significance: ** p ≤ 0.01; * p ≤ 0.05*								
OC – Organizational commitment								

Source: Authors' research

The results of the regression analysis, shown in Table 5, test the moderator role of OC on the relationship between the availability of training and hotel business performance (Model 2). Based on the data presented, the coefficient *availability of training x organisational commitment* is negative and not significant (β = - 0.332, p = 0.710). This means that hypothesis *H_{5a} is rejected*, i.e. organisational commitment does not moderate the relationship between the availability of training and a hotel business performance. The results of Model 4 also show that the coefficient of *motivation to learn x organisational commitment* is negative and not significant (β = - 1.125, p = 0.331), so hypothesis *H_{5b} is rejected*.

Hypothesis H_{5c} is rejected since the coefficient *support from training associates x organizational commitment* is positive but not significant (β = 0.055, p = 0.331), which means that organisational commitment does not moderate the relationship between the support from training associates and a hotel's performance. Also, *hypothesis H_{5d} is rejected*. The coefficient *benefits of training x organisational commitment* is negative and not significant (β = -0.640, p = 0.588), which means that employee commitment does not moderate the relationship between the benefits of training and a hotel business performance.

6. Discussion, implication, and limitation of the research

The results of the study provide answers to the above defined research questions.

First, the most developed component/dimension of employee training is the benefits of training (Mean = 4.548). This research showed that employees recognize the importance of training both at the individual (personal) level through the acquisition of new knowledge and better value on the labor market, and at the organizational level through more efficient, productive work of employees and better service, the volume of service and other business results.

However, the first concern is that good training programs can increase employability and the desire of employees to leave the organization (Ling et al., 2014). That is why the realisation of training for employees becomes interesting in the new employment background (Ling et al., 2014). The second concern stems from the low availability of training (Mean = 3.793). Such results can be justified by lower current investments in the training and development of employees as a consequence of the pandemic crisis (Jayathilake et al., 2021; Mikołajczyk, 2022).

Second, the results of the study indicate the contribution of all observed components of employee training to the hotel business performance. The results of this study are aligned with the conclusions of studies (Panagiotakopoulos, 2020; Ta'Amnha et al., 2023) as well as with social exchange theory (Renaud & Morin, 2020) and human capital theory. Formal employee training becomes an important strategic tool for hotels that help management gain a broader understanding of how to motivate their employees (Panagiotakopoulos, 2020). Employees who have completed the training program are better able to meet the demands of the job, get positive personal performance evaluations, and make decisions (Renaud & Morin, 2020). Therefore, it can be concluded that the result of the training is a significant improvement in the quality of hotel services through employee skills and morale because most employees feel that they belong to a hotel that shows interest in the professional development of its employees (Panagiotakopoulos, 2020). Providing high-quality hotel services leads to maximizing business success (Renaud & Morin, 2020).

Third, OC has no moderating effect on the relationship between employee training components/dimensions and hotel business performance. It is clear that the surveyed employees do not view training as an important benefit that they consider when evaluating their commitment to the hotel (Bashir & Long, 2015). Employees remain committed to the hotel because of the investments or expenses they have made (retirement, connections they have made with co-workers), not because of the training programs implemented (Bashir & Long, 2015). When interpreting the obtained results, we follow the conclusion of Rawashdeh and Tamimi (2020) that the results cannot be generalized since there are differences in the level of knowledge and commitment to training among the respondents. Also, cultural differences between countries significantly affect the development of awareness about the commitment of employees to the hotel (Newman et al., 2011). In the literature, authors (Ling et al., 2014; Newman et al., 2011; Rawashdeh & Tamimi, 2020) interpret the lack of training contribution in the following ways. First, organization commitment will be lacking if the training is not voluntary, but supervisors decide who will attend the training. Second, the limited opportunities for career development and promotion of employees after completing training and acquiring knowledge lead to the absence of organisational commitment. Third, even if employees perceive the benefits of training, it may not increase their commitment if they are not able to apply the acquired skills in the hotel. Fourth, the content of the training is directed mainly towards the needs of the organization, while the needs of individual employees are not analyzed more broadly. Performance-oriented employees are interested in maximizing current job performance, so they may not support and participate in learning and development programs because this will mean engaging the employee beyond the optimal level of performance (Maurer & Lippstreu, 2008).

6.1. Practical implication

The research has several practical implications. First, hotel management must provide additional training programs for employees. Availability of training has the lowest mean value, which means that the hotels are not sufficiently committed to the organization of training programs. This is understandable given the turbulent business in pandemic conditions. However, the management must use the next period for the promotion of training among employees and the organization of various training programs, respecting the needs of the hotel as well as the needs of the employees.

Second, looking at the impact of training components on the hotel business performance, it is certain that investment in training should be one of the reliable tools for improving performance. This is particularly typical for the hotel industry, where human resources are key factors in the quality and experience of hotel service. Management must pay special attention to the benefits that training provides to employees since this variable mostly explains hotel business performance. Therefore, management must direct attention to building awareness among employees about the benefits that training can bring to both employees and the organization. Employee benefits create better marketability of the workforce and increase its value. Such hard-working and trained employees bring benefits to the hotel through better work efficiency and results per unit of time.

Third, the results that do not support the moderating influence of OC on the relationship between employee training and hotel business performance are worrying. This means that investing in employee training in order to improve performance does not lead to satisfactory organisational commitment. The issue of commitment is of particular importance for retaining employees and improving their performance. Therefore, hotel management must provide and invest in other benefits for employees - social benefits, psychological or economic benefits - in order to improve organisational commitment.

6.2. Limitation of research

The first limitation refers to the lack of quantitative support for the calculation of employee training contributions. There are certain financial allocations in hotels for the training of employees, but this information does not say much. Its comparison in relation to the total sum allocated for employee training does not determine the size of the contribution of this variable to hotel business performance. In addition, information about the availability of training, motivation to learn, and support from supervisors can not be quantified, which means that employee training could not be observed through these components.

The second limitation relates to the assessment of hotel business performance. Performance can be measured using financial and non-financial indicators. The assessment of hotel business performance in the paper refers to the assessment of financial indicators that are descriptively presented (according to Tseng and Lee, 2014). The next limitation relates to a narrow set of business performance (financial and non-financial), as well as this study did not include some specific performance for the hotel industry, such as total revenue per available room, cost per occupied room, average room rate, average length of stay, etc.

In addition, the traditional lack of interest of employees to approach the survey process leads to a low respondent rate. Respondents in hotels make up 25% of the total number of hotels available for surveying.

6.3. Future research

Future research should be based on expanding the components of employee training and a more detailed analysis of organizational performance – profitability indicators, market value performance, etc. Future research can focus on comparing the availability and development of employee training with other, labor-intensive activities. It is also possible to analyze the achieved financial results of the hotel before and after investing in employee training. It is very important to determine the department in the hotel where the training had the greatest effect on the results of the department.

Conflict of interest

The authors declare no conflict of interest.

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A multiple-criteria approach for the evaluation of comparative indicators of sustainable tourism

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Abstract: In this paper, a multiple-criteria approach has been applied to evaluate and rank types of development indicators of sustainable tourism. Groups of indicators whose comparison was presented through evaluation and prioritization are economy, the satisfaction of tourists, social and cultural elements, as well as environmental ones. The types of indicators discussed in the paper are designed to provide guidelines for measuring the degree of compliance. Using Pivot Pairwise Relatives Criteria Importance Assessment (PIPRECIA) method we have defined the evaluation of the mentioned indicators and their importance. The primary goal of the paper is to demonstrate the practical sides of the Multiple-Criteria Decision-Making (MCDM) methods in this sort of analysis while highlighting the most crucial sustainable tourism indicators.

Keywords: multiple-criteria decision-making, PIPRECIA method, analysis, sustainable development tourism
JEL classification: C44, L83, Q01

Višekriterijumski pristup namenjen evaluaciji komparativnih pokazatelja održivog turizma

Sažetak: U ovom radu primenjen je višekriterijumski pristup za evaluaciju i rangiranje tipova indikatora održivog razvoja turizma. Grupe indikatora čije poređenje se predstavilo kroz evaluaciju i prioritizaciju u radu su: indikatori ekonomskog karaktera, zadovoljstva turista, socijalni indikatori, kulturni i indikatori stanja životne sredine. Tipovi indikatora o kojima govorimo koncipirani su tako da obezbeđuju smernice za merenje stepena usaglašenosti. Koristeći *Pivot Pairwise Relatives Criteria Importance Assessment (PIPRECIA)* metodu definisali smo evaluaciju navedenih indikatora i njihov značaj. Osnovni cilj rada je da ukaže na korisnost primene višekriterijumskih metoda odlučivanja (*Multiple-Criteria Decision-Making Methods – MCDM*) u implementaciji ove vrste analize, kao i da ukaže na najznačajnije indikatore održivog turizma.

Ključne reči: višekriterijumsko odlučivanje, PIPRECIA metod, analiza, održivi razvoj turizma
JEL klasifikacija: C44, L83, Q01

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1. Introduction

The basic components of sustainable development are economic development, meeting the main needs of the customers, and ensuring a sustainable level of the population. Sustainable development involves changing technologies and risk management, connecting the economy and "ecology" in decision-making, and reorientating international relations (Lukinović et al., 2017). It is a process involving current requirements without questioning the requirements of future generations, that will have to find a way to meet its own needs. Sustainable development is a procedure that meets current demands while ensuring the ability of future generations to fulfill their own requirements. It encompasses not only the economic and ecological relationship but also aligns ecological development with social policy on the global level. Its approaches demonstrate the impacts of long-term patterns in sustainable production and consumption (Ožegović et al., 2012).

The progress of sustainable tourism development has been analysed using certain indicators. Defining and using sustainable tourism indicators should be one of the key topics at the early stage such as the planning process. Indicators enable constant and consistent monitoring of changes over time, as well as clarifying goals and, just as importantly, making those goals more specific. Indicators should show the state of the tourism industry (e.g., tourist satisfaction), pressure on the system (e.g. lack of water, level of crime), the impact of tourism (e.g. impact on communities, deforestation), the cope of management (e.g. resolving pollution), effects of management actions (e.g. change in pollution level, number of returning tourists). According to Stojanović (2011) "using such a system of indicators would have to provide warnings when new actions are necessary to prevent harmful impacts and provide a basis for long-term planning and analysis of tourism activities" (p. 223). Indicators of sustainable tourism are widely used in many tourist destinations. Also, some countries and tourist destinations have separate centres for monitoring the impact of tourism (Dražić, 2020).

According to Stojanović (2011, p. 224) and Kostić et al. (2018), a group of specialists suggested a set of comparative indicators to the European Union's Commission to assess and measure the level of sustainability of tourism development.

The indicators used for evaluating tourism can be categorized into five groups:

- The first group, economic indicators, assesses the economic impact of tourism on a particular area;
- The second group, tourist satisfaction indicators measure tourists' satisfaction with the quality of facilities and services, as well as their perception of the attractiveness of the area's resources, environment, and sociocultural features;
- The third group, social indicators evaluate the well-being of the local community in the tourist region or place;
- The fourth group, cultural indicators, assesses the extent to which the local community's cultural identity is preserved by tourists from different cultural backgrounds;
- Lastly, environmental indicators provide a snapshot of the condition of the environment and the impact of tourism on specific media.

Comparative indicators are defined based on the need to integrate economic, environmental, social, cultural, and tourist satisfaction factors. These indicators help evaluate the current state of tourism development in a certain area and the results provide important indications of necessary administrative measures and activities that should be done.

The application of indicators is based on a coding system that determines the threshold values for each indicator, based on which the situation is evaluated as critical, tolerable, and sustainable (Stojanović, 2011, p. 225).

The reason these indicators are referred to as warning indicators is that they signal potential issues. To facilitate understanding, a coding system has been introduced which incorporates three zones:

- The red zone signifies that the situation is critical and that immediate action must be taken to modify and tightly control or even halt the further development of tourism;
- The yellow zone indicates that the situation is tolerable, but future tourism growth could cause significant changes, so preventative measures are recommended;
- The green zone evaluates the current state of tourism development as sustainable due to effective management and appropriate measures and action taken in the past.

The experiences from earlier research have defined precise limit values for some of the indicators, while for others they have not, which suggests the necessity of future work and research in the field.

The need for defining the significance of the considered indicators imposes the application of the Multiple-Criteria Decision-Making (MCDM) methods as an adequate approach. In that way, the tourism workers will know what factors have crucial significance and the greatest influence on achieving sustainable tourism goals.

MCDM approaches have been widely used for selecting site locations for energy generation, logistic public services, and retail facilities by considering a set of alternatives and contradictory criteria (Yap et al., 2019). These methods have also been successfully applied in the tourism sector and hospitality industry for managerial decision-making (Mardani et al., 2015). Several articles have proposed an integrated analysis model for sustainable development that combines social, economic, environmental, and technical factors using hybrid MCDM methods (Singh et al., 2022). For example, some studies have focused on Sustainable Development Goals (D'Adamo & Gastaldi, 2022) while others have evaluated smart cities' characteristics as smart tourism destinations (Đukić et al., 2022a).

Lin (2020) used DEMATEL and VIKOR methods to assess the Sustainable Development Indicators (SDI) related to rural and urban tourism development. Rough DEMATEL and Bayesian BWM were used to estimate the effective relationship of the criteria in sustainable sports tourism (Yang et al., 2020). The hybrid MCDM model based on the fuzzy SWARA and fuzzy MARCOS methods was applied to evaluate the health of tourism sites from a sustainable perspective (Taş & Çakir, 2022). Garabinović et al. (2021) have explored the application of the MCDM methods in the eco and sustainable tourism field. The sustainability of the farm tourism sites was evaluated using FUCOM and WS methods in the fuzzy environment (Ocampo, 2022). Researchers have observed the possibility of applying the MCDM methods to assess hotel sustainability (Wang & Nguyen, 2022). Besides, the MCDM approach based on the AHP and WS PLP method was used to evaluate the projects regarding hotel construction (Popovic et al., 2019).

The proposed comparative indicators of sustainable tourism require extensive research and the collection of the necessary information. The definition of comparative indicators itself arose from the need to integrate environmental, economic, cultural, social, and tourist satisfaction indicators which may have contradictory aspects. To achieve optimal results in sustainable goals in the tourism field, it is necessary to define which of the mentioned indicators are decisive and the most influential. With that goal, through the application of the Pivot Pairwise Relative Criteria Importance Assessment (PIPRECIA) method, we can determine which indicators highly affect sustainable development and its improvement (Stanujkic et al., 2017).

2. Methodology

In contrast to the SWARA method, the PIPRECIA method doesn't require criteria to be ranked based on expected significance prior to the use. Although less commonly used than the SWARA method, PIPRECIA has been applied in various scenarios such as assessing customer satisfaction (Stanujkic et al., 2019), personnel selection based on a novel grey PIPRECIA and grey OCRA methods (Ulutaş et al., 2020), the evaluation of the hotel websites (Stanujkic et al., 2021a), selection of renewable energy sources with the plithogenic PIPRECIA method (Ulutaş & Topal, 2022), green supplier's selection (Puška, 2022), and evaluating renewable energy sources using fuzzy logic (Keleş et al., 2022). During the application of the PIPRECIA method, some respondents have suggested that it would be simpler to always compare the significance of the criteria with the first criterion. To accommodate this feedback, a simplified version of PIPRECIA, called PIPRECIA S, has been developed (Stanujkic et al., 2021b). This simplified method could be utilized in future scientific research.

The process used in this study is based on the one outlined in Stanujkic et al.'s (2017) paper and can be divided into the following steps.

Step 1. The selection of evaluation criteria does not require mandatory pre-sorting.

Step 2. The process of determining the relative importance starts from the second criterion and proceeds as follows:

$$s_j = \begin{cases} >1 & when \quad C_j \succ C_{j-1} \\ 1 & when \quad C_j = C_{j-1} \\ <1 & when \quad C_j \prec C_{j-1} \end{cases}. \tag{1}$$

Step 3. The coefficient k_j is defined as follows:

$$k_j = \begin{cases} 1 & j = 1 \\ 2 - s_j & j > 1 \end{cases}. \tag{2}$$

Step 4. Detection of the recalculated value as follows: q_j

$$q_j = \begin{cases} 1 & j = 1 \\ \dfrac{q_{j-1}}{k_j} & j > 1 \end{cases}. \tag{3}$$

Step 5. The relative weights of the assessed criteria are determined using the following equation:

$$w_j = \frac{q_j}{\sum_{k=1}^{n} q_k}, \tag{4}$$

where w_j represents the relative weight of the criteria j.

3. Research results

The concept of modern business apostrophizes the importance of sustainability in all segments, including tourism. The proposed comparative indicators of sustainable tourism require extensive research and the collection of the required information. Data complexity is characterized by the fact that they are divided into different groups: economic, ecological, social, cultural, and tourist satisfaction. Presently, it seems to be a valid method to measure the sustainability of tourism. The practices confirmed that the competent authorities and the economic sector are ready to consistently apply these indicators.

In 2018, the European Environment Agency published a report entitled *Tourism and the Environment*, which is the result of the joint work of the EEA, ETC/ ULS (European Topic Center on Urban Land and Soil Systems), and EIONET/NRC TOUERM (EIONET Expert Group for Tourism and Environment) (Giulietti et al., 2018). The European Union Commission's report provides a catalogue of relative benchmarks that aid in evaluating and measuring the level of sustainable progress in tourism development. This contributes to research regarding the impact of tourism on the environment and facilitates the monitoring of sustainability trends (Stojanović, 2011, 229).

In Table 1 we can see the display of indicators connected with sustainable tourism in the European Union.

Table 1: Overview of indicators – Comparative indicators of sustainable tourism of the European Union

Indicator type		**Indicators**	
Ec_1	Economic	Ec_{11}	Seasonal nature of traffic
		Ec_{12}	The ratio of overnight stays and accommodation capacities
		Ec_{13}	Coefficient of local magnification
		Ec_{14}	Employment of the local population
		Ec_{15}	Business innovation
Ts_2	Tourist satisfaction	Ts_{21}	Repeat visits
		Ts_{22}	Acquired reputation and credibility
		Ts_{23}	Tourism policy
		Ts_{24}	The importance of heterogeneity of long-term tourism goals
		Ts_{25}	Coefficient of local tourist increase
Cu_3	Culture	Cu_{31}	The ratio of accommodation capacity and the number of the population
		Cu_{32}	Intensity of tourism
		Cu_{33}	The degree of cultural saturation of the local environment
		Cu_{34}	Provision of the necessary infrastructure
		Cu_{35}	The burden on the budget of local communities
So_4	Social	So_{41}	Participation in tourism in the local net social product
		So_{42}	Independence of the local tourism industry
		So_{43}	Indicator of the usefulness of tourism for the local community
		So_{44}	The influence of international tour operators
Ei_5	Environmental indicators	Ei_{51}	Changes in land use
		Ei_{52}	Amount of solid waste per tourist
		Ei_{53}	Tourist arrivals by type of transport
		Ei_{54}	Controlling the pressure of excessive tourist construction
		Ei_{55}	Rational use of natural resources - energy and water

Source: Adapted from Stojanović, 2011, p. 229

The PIPRECIA method was applied to determine which group of indicators, as well as which indicators individually, require special attention and point to aspects that have a key impact on achieving business sustainability. A decision-maker is involved in the decision-making process to assess the listed indicators and determine if the suggested approach is suitable (Đukić et al., 2022b). First step is to determine the importance of groups of indicators and the second step is to assess indicators individually. For this purpose, formulas (1)-(4) will be applied. Table 2 shows the obtained results.

Table 2: The relative importance of indicators group

Indicators	s_j	k_j	q_j	w_j
Ec_1		1	1	0.157
Ts_2	1.30	0.70	1.43	0.224
Cu_3	1.00 am	1.00 am	1.43	0.224
So_4	0.80	1.20	1.19	0.187
Ei_5	1.10	0.90	1.32	0.208
			6.37	1.00 am

Source: Authors' research

The obtained results indicate that the group of indicators Ts_2 - Tourist satisfaction, as well as Cu_3 - Cultural indicators, has the greatest importance, while group Ei_1 - Economic indicators have the least importance in this case.

Based on Table 1, we could notice that each group of indicators includes several indicators, the importance of which will be determined and shown in Tables 3-7.

Table 3 contains the weights of economic indicators.

Table 3: The relative importance of economic indicators

Indicators	s_j	k_j	q_j	w_j
Ec_{11}		1	1	0.230
Ec_{12}	0.90	1.10	0.91	0.209
Ec_{13}	0.70	1.30	0.70	0.161
Ec_{14}	1.20	0.80	0.87	0.201
Ec_{15}	1.00	1.00	0.87	0.201
			4.36	1.00

Source: Authors' research

Based on the economic type of indicators, we can notice that indicator Ec_{11} - Seasonal nature of traffic was singled out as the most significant, while indicator Ec_{13} - Coefficient of local magnification is the least significant.

Table 4 shows the importance of indicators related to tourist satisfaction.

Table 4: The relative importance of tourist satisfaction

Indicators	s_j	k_j	q_j	w_j
Ts_{21}		1	1	0.216
Ts_{22}	1.10	0.90	1.11	0.240
Ts_{23}	0.80	1.20	0.93	0.200
Ts_{24}	1.00	1.00	0.93	0.200
Ts_{25}	0.60	1.40	0.66	0.143
			4.62	1.00

Source: Authors' research

Based on the indicators related to tourist satisfaction, we can note that the most significant indicator is Ts_{22} - Acquired reputation and credibility, while the least important is Ts_{25} - Coefficient of local tourism increase.

Table 5 shows the importance of the considered culture-related indicators according to the decision-maker.

Table 5: The relative importance of cultural indicators

Indicators	s_j	k_j	q_j	w_j
Cu_{31}		1	1	0.206
Cu_{32}	1.00	1.00	1.00	0.206
Cu_{33}	0.70	1.30	0.77	0.159
Cu_{34}	1.10	0.90	0.85	0.176
Cu_{35}	1.30	0.70	1.22	0.252
			4.84	1.00

Source: Authors' research

Indicator Cu_{35} - Burden on the budget of local communities was singled out as the most significant indicator, and Cu_{33} - Degree of cultural saturation of the local environment was singled out as the least important indicator. The importance of social indicators is shown in Table 6.

Table 6: The relative importance of social indicators

Indicators	s_j	k_j	q_j	w_j
So_{41}		1	1	0.210
So_{42}	1.10	0.90	1.11	0.233
So_{43}	1.20	0.80	1.39	0.292
So_{44}	0.90	1.10	1.26	0.265
			4.76	1.00

Source: Authors' research

The obtained results indicate that the greatest importance in this group is indicator So_{43} – An indicator of the usefulness of tourism for the local community, and the least important is indicator So_{41} - Participation in tourism in the local net social product.

Finally, Table 7 shows the importance of the criteria belonging to the environmental condition group.

Table 7: The relative importance of environmental indicators

Indicators	s_j	k_j	q_j	w_j
Ei_{51}		1	1	0.236
Ei_{52}	1.00	1.00	1.00	0.236
Ei_{53}	0.70	1.30	0.77	0.181
Ei_{54}	0.90	1.10	0.70	0.165
Ei_{55}	1.10	0.90	0.78	0.183
			4.25	1.00

Source: Authors' research

Ei_{51} - Changes in land use and Ei_{52} – The amount of solid waste per tourist was singled out as the most significant indicators in this group, and Ei_{54} – Controlling the pressure of excessive tourist construction was singled out as the least important indicator.

By multiplying the defined local importance of the group of indicators and the associated indicators of sustainable tourism business, the global importance of the associated indicators is defined (Table 8).

Table 8: Final ranking of the evaluated factor

Indicator type		**Importance dimension**	**Indicators**	**Local importance indicators**	**Global importance indicators**
Ec_1	Economic	0.157	Ec_{11}	0.230	0.036
			Ec_{12}	0.209	0.033
			Ec_{13}	0.161	0.025
			Ec_{14}	0.201	0.032
			Ec_{15}	0.201	0.032
Ts_2	Tourist satisfaction	0.224	Ts_{21}	0.216	0.048
			Ts_{22}	0.240	0.054
			Ts_{23}	0.200	0.045
			Ts_{24}	0.200	0.045
			Ts_{25}	0.143	0.032
Cu_3	Culture	0.224	Cu_{31}	0.206	0.046
			Cu_{32}	0.206	0.046
			Cu_{33}	0.159	0.036
			Cu_{34}	0.176	0.039
			Cu_{35}	0.252	0.056
So_4	Social	0.187	So_{41}	0.210	0.039
			So_{42}	0.233	0.043
			So_{43}	0.292	0.055
			So_{44}	0.265	0.050
Ei_5	Environmental indicators	0.208	Ei_{51}	0.236	0.049
			Ei_{52}	0.236	0.049
			Ei_{53}	0.181	0.038
			Ei_{54}	0.165	0.034
			Ei_{55}	0.183	0.038

Source: Authors' research

Table 9 shows prioritized indicators in the decreasing order.

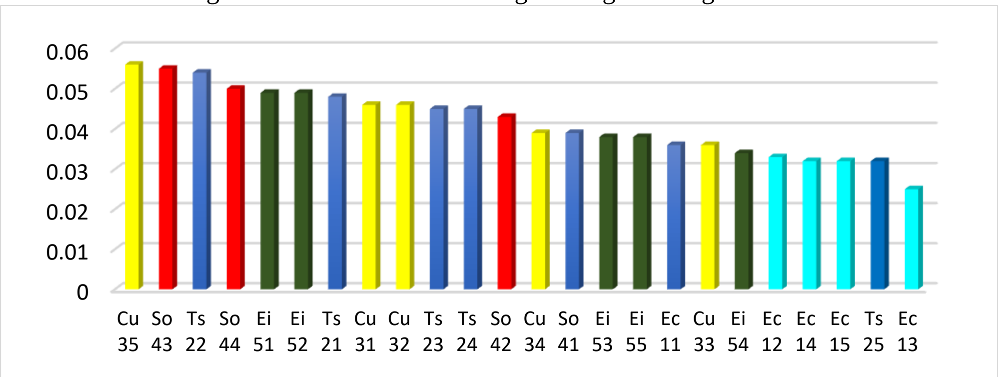
Table 9: Prioritization indicators of sustainable tourism

Types indicators	**Global craft**	**Rank**
Cu 35	0.056	1
So 43	0.055	2
Ts 22	0.054	3
So 44	0.050	4
Ei 51	0.049	5
Ei 52	0.049	5
Ts 21	0.048	6
Cu 31	0.046	7
Cu 32	0.046	7
Ts 23	0.045	8
Ts 24	0.045	8
So 42	0.043	9
Cu 34	0.039	10
So 41	0.039	10
Ei 53	0.038	11
Ei 55	0.038	11
Ec 11	0.036	12
Cu 33	0.036	12
Ei 54	0.034	13
Ec 12	0.033	14
Ec 14	0.032	15
Ec 15	0.032	15
Ts 25	0.032	15
Ec 13	0.025	16

Source: Authors' research

Table 9 shows, based on the results and the ranking, that certain indicators occupy the same rank, which means that they have equal importance for the decision-maker. The fact is that it is necessary to consider all the presented indicators that demonstrate the level of sustainability of tourism activities. However, defining their importance allows us to highlight those perhaps more significant than the others in present conditions, and to underline those that require special attention in a certain period.

Figure 1: Indicators with the highest degree of significance



Source: Authors' research

The figure above shows the most important indicators for sustainable tourism.

The first and second-ranked indicators belong to the same category and have a strong connection and influence on each other. The top indicator, Cu $_{43}$, measures the usefulness of tourism for the local community and should be compared with the level of involvement of the local population in tourism, as it affects the community both economic and infrastructurally. This indicator is conditionally linked with the second-ranked indicator, *So* $_{44}$, which measures the influence of international tour operators, because it determines the relationship between direct bookings and bookings made through foreign or domestic tour operators and reflects the usefulness of tourism for the local community. The third-ranked indicator, Cu 35, measures the burden on the budget of local communities and considers the optimal number of accommodation facilities in relation to the local population of the destination. This indicator has a cultural influence on the architectural appearance of the tourist area or place and requires appropriate infrastructure, which can be costly for local communities. Therefore, conducting comprehensive research is crucial to reduce the burden on the budget.

4. Conclusion

This paper created the ranking of groups of indicators and associated indicators that describe the progress of sustainable development of tourism using the method of multi-criteria unlearning, more precisely the PIPRECIA method. Five groups of indicators were evaluated, namely: Ec_1 - Economic indicators, Ts_2 - Tourist indicators satisfaction, Cu_3 – Cultural indicator, So_4 - Social indicators, and Ei_5 - Environmental indicators. Each of the indicated group of indicators includes a corresponding set of indicators.

Based on the obtained results, we can conclude that the group of indicators Ts_2 – Tourist satisfaction, and Cu_3 – Cultural indicators are greatly important, based on the attitude of the decision maker, while Ei_1 – Economic indicators have the least importance. Although the economic indicator is usually considered very important and influential, in this case, the satisfaction of tourists is more important because it is crucial for the tourist to be satisfied and to return to the destination again and again. After all, this is the only way to create a base of loyal clients. The group of cultural indicators includes adequate accommodation capacities about the number of inhabitants, the intensity of tourism in and out of season, and adequate provision of the necessary infrastructure that can provide tourists with variety, and complete content, which builds on the indicators related to tourist satisfaction.

The PIPRECIA method proved to be applicable and useful in defining the importance of indicators, i.e. those indicators that require the most attention according to the opinion of the decision maker in terms of improving the sustainability of the tourism business. The goal defined at the beginning, which included determining the significance of the presented set of indicators as well as checking the applicability of the PIPRECIA method, was successfully achieved.

The primary weakness of this study is that the decision-making process involves only one individual, leading to highly subjective results. Moreover, the example presented is hypothetical and not associated with any particular tourist destination. Depending on the tourist destination, as well as on the involved decision makers, it is quite expected that the obtained results will be different compared to those shown here. However, this does not diminish the usefulness and applicability of multi-criteria decision-making methods, because if all aspects are properly established, the definition of relevant results will not be missing. To obtain the most realistic results, it is advisable to include a larger number of decision-makers and to base the calculation procedure on the application of unclear or interval numbers to take into account the variability of the environment to a greater extent.

Applying the appropriate extensions of the PIPRECIA method in sustainable tourism represents critical propositions for future research. The unclear, grey, or rough PIPRECIA method will yield more representative and reliable results because the vagueness will be acknowledged better. Finally, observing the possibilities for applying the MCDM methods in the tourism field will facilitate the decision-making process and enable adequate decisions.

Conflict of interest

The authors declare no conflict of interest.

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Dark tourism in Serbia: Case study of the Kragujevački oktobar Memorial Park

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Abstract: The study presented in the paper employs the benefit-based approach to analyse the potentials of dark tourism as a context which outlines cultural tourism within a broader framework of contemporary tourism development. The focus of the research is the Kragujevački oktobar Memorial Park, which is one of the most infamous dark tourism spots in Serbia – well known among its residents as well as the Balkan region. The research looks into the travellers' reasons for visiting the sight, their on-site experiences and benefits gained. The results of the study highlight the identified motivation and reasons for visiting the Memorial Park, as well as provide a comprehensive overview of the ways the visitors are affected.

Keywords: memorial park, dark tourism, benefit-based approach, Kragujevački oktobar
JEL classification: Z10, Z32

Mračni turizam u Srbiji: Studija slučaja Spomen-parka Kragujevački oktobar

Sažetak: Studija predstavljena u radu koristi pristup zasnovan na koristima za analizu potencijala mračnog turizma kao konteksta koji kulturni turizam ocrtava u širem okviru savremenog razvoja turizma. U fokusu istraživanja je Spomen-park Kragujevački oktobar, koji je jedno od najzloglasnijih mračnih turističkih mesta u Srbiji – dobro poznato među stanovnicima, ali i na Balkanu. Istraživanje se bavi razlozima putnika za posetu znamenitosti, njihovim iskustvima na licu mesta i stečenim koristima. Rezultati studije ističu identifikovanu motivaciju i razloge za posetu Spomen parku, kao i sveobuhvatan pregled iskustava posetilaca.

Ključne reči: memorijalni park, mračni turizam, pristup zasnovan na koristima, Kragujevački oktobar
JEL klasifikacija: Z10, Z32

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1. Introduction

With an increasing amount of information becoming ever more readily available and accessible to the general masses - greatly aided by the rapid growth of ICT and the use of the Internet - tourists nowadays are better-informed compared to those that travelled in the last century. Due to this fact, travellers tend to use ICT to best aid their tourism-related needs (Charkina et al., 2022). Being acquainted with the users' needs and knowing the ways of fulfilling them, the tourism service providers have been trying to meet the specific needs of users by developing numerous niche branches, one of them being dark tourism.

Traveling to locations that have traditionally been linked to tragedy and death is referred to as dark tourism, also known as thana tourism (as in Thanatos, the embodiment of death in Greek mythology), black tourism, or grief tourism (Foley & Lenon, 1996). However, the attention has recently been drawn to the fact that the concept of dark tourism should also incorporate the reasons or the motivation for tourists to visit such places because of their role in making a 'dark tourist' (Antić et al., 2021; Issac & Çakmak, 2013). Many tourists visiting these types of destinations may just be interested in the destination's history or cultural and heritage value, or they might be the family and relatives of the affected. Dark places are more popular for their history than for their association with sorrow and death (Reed, 2007). According to the studies on motivation for visiting dark tourism destinations (Biran & Poria, 2012; Biran et al., 2011; Du et al., 2013; Miles, 2014), visitors who are interested in these destinations tend to have an interest in attempting to understand and learn about past events. In this sense, dark tourism has common motivations for visiting with heritage/cultural tourism (Light, 2017).

There is an abundance of destinations and historical sites that can be used to attract dark tourists and further educate them about the history of the Serbian people, while promoting the cultural heritage of the country. Since there is no recorded activity on promotion of dark tourism in Serbia known to the authors, the major problem that could be faced in the implementation is the limitations originating from the improper and inefficient promotion of tourist products to their respective target audiences. Another problem that arises is a lack of financial support from the Government when it comes to securing and preservation of these historical sites.

2. Theoretical background

The definitional framework for dark tourism was too narrow prior to the 1996 publication of the monograph *Dark Tourism: the attraction of death and disaster* (Lennon, 2017). The author did, however, posit that the spectrum of dark tourism may be used to identify elements of the ancient, modern, and post-modern. He goes on to say that dark tourism entails: "*(1) Visits to death sites and disaster scenes, (2) Visits to sites of mass or individual death, (3) Visits to sites of incarceration, (4) Visits to representations or simulations associated with death and (5) Visits to re-enactments and human interpretation of death*" (Lennon & Powell, 2018, p. 1).

For a long time, people have been drawn to places that have seen death, calamity, misery, bloodshed, and killing. Death has always been an attraction, from gladiatorial combat in ancient Rome to seeing public hangings in London. On the day following the first battle of the American Civil War, Manassas, the location of battle was advertised as a prospective tourist destination (Foley & Lennon, 2000) and the viewing of the battlefield of Waterloo by non-combatants was recorded in 1816 (Seaton, 1999). The beginning of the 21st century was marked by one of the worst terrorist attacks known to modern society. Ground Zero, i.e. the place where the World Trade Centre used to stand is now a memorial park that is visited by thousands of people every year (Sharpley, 2018). The final resting place of Diana, Princess of Wales, who passed away in Paris and buried at Althorpe, United Kingdom, serves as another illustration of the point. Althorpe achieved significant visitation for the three years immediately following her death (Rowe, 2007). Academic interest in these phenomena was pioneered in the work of Rojek (1993) and Ashworth (1996) and Foley and Lennon (1996) and this has, in turn, contributed to considerable interest both in academia, mainstream and electronic media. Today, a wide variety of locations are connected with dark tourism, ranging from Holocaust sites—which may contain evidence of genocide, mass murder, incarceration, and experiments—to the manufactured Merlin Entertainment PLC business (Lennon, 2017).

Due to its complex nature, dark tourism can often be misidentified or improperly noted as heritage tourism, one of the most prominent examples being Rome. Namely, when talking about the Colosseum, which is one of Italy's most well-known destinations, it is very hard to distinguish the true reason for some tourist visits, even in the eyes of the tourists themselves (Martini & Buda, 2020). The issue of whether they visit this destination purely because it is a cultural symbol of Italy, or because they can appreciate the events that took place there and have shaped the history and entertainment industry from such early times (Buda, 2015) does not imply a simple answer. The complexity of providing the answers is further deepened by the fact that all the mentioned reasons are mutually interwoven and do not often function on a solitary basis. Some people might only be visiting the Colosseum because it is one of the 'New seven world wonders' and might never consider the tragedy and suffering that took place on its stage (Stone, 2013).

Jamin et al. (2020) see dark tourism as one of many examples of tourism products that can respond to tourists' constant search for new trends. The findings of these authors indicate that dark tourism can substantially contribute to the development of the future tourism industry. Additionally, when taking media into consideration, it has also helped increase the demand for dark tourism through all the attention it has been giving to such places through various recreations and reproductions either for educational or entertainment purposes. This type of content has become ever less censored over the years allowing the media and the movie industry to portray what happened in these places with greater accuracy and true-to-life storytelling (Miles, 2014). Another thing worth mentioning regarding media's influence is the awareness function in real-time reportage and informing the general masses of crimes that may be brutal. Current media trends require the audience to know exactly what is happening, as it is happening (Ashworth & Isaac, 2015). As a result, the audience has a higher awareness of the presence of destinations of aforementioned crimes and develops a higher level of understanding of their importance. In regard to that, with higher awareness, people are more likely to do the research themselves and to visit and explore these places (Biran & Hyde, 2013). Certainly, as Bowman and Pezzullo (2009) emphasised, dark tourism is not a bright or cheerful travel practice, but it causes cultural learning through instructive moral, spiritual and ideological rewards.

As the paper of Ivanova and Light (2018) reports, a majority of participants of the survey, who actually visited dark tourism spots, did so with general or incidental reasons unrelated to the site itself and a limited few have reported informal education as their main motive for visiting such places. Zheng et al. (2020) pointed out that places of death for modern tourism could be places of spiritual transformation and sanctity. These authors have shown how emotional experiences can be transformed and constructed into the meaning of a place from the aspect of tourism. In addition, the motivations and visits of tourists within dark tourism are increasing, as shown in research by Lewis et al. (2021), who show travel choices in dark tourism that result from personal beliefs and preferences.

Stone (2012) classifies and uses examples to map dark tourism places, based on different topics: "*(1) Dark Tourism as Narrative; (2) Dark Tourism as Education; (3) Dark Tourism as Entertainment; (4) Dark Tourism as Haunting (Memories); (5) Dark Tourism as Memorialisation; (6) Dark Tourism as Moral Instruction; and (7) Dark Tourism as Memento Mori*" (p. 1577). In Stone's research, dark tourism places are often identified with multiple themes and include more than one category. However, as Stone and Sharpley (2008) point out, dark tourism plays an important role in 'reviving mortality' through its modern representation and commemorative situations. Taking into account Stone's classification, most studies are mapped from multiple aspects, and the current study can be first related to dark tourism as education and dark tourism as memorialisation.

In order to understand the correlations between travelling to learn, gaining experience or having a sense of moral obligation, this study employs a benefit-based approach used in a similar study (Kang et al., 2012) focusing on a memorial park in South Korea. Originally, this approach was utilised by Driver et al. (1987). Kang et al. (2012) point out the effectiveness of using a benefit-based approach in the evaluation of visitors' experiences along with Driver et al. (1991) and Lee and Driver (1999) who have applied this approach to recreation sites and Prentice et al. (1998) who have applied it to heritage parks. McIntosh (1999) further applied it to product development of heritage tourism as well as its promotion. This paper aims to contribute to the existing literature on the topic of dark tourism employing tested approaches by examining the correlation of personal and moral obligations and motives for visiting a dark tourism destination, i.e. the Kragujevački oktobar Memorial Park.

3. Research area

The Kragujevac Massacre was the mass murder of around 2700 Serbs carried out by the troops of the Wehrmacht following the order of Franz Friedrich Böhme. After having liberated the town of Gornji Milanovac, Chetniks and Partisans intercepted Nazi troops near the city of Kragujevac, killing 10 Nazi soldiers and wounding 26. On October 10th, an order was issued to shoot 100 people for one German soldier killed, and fifty for one wounded - a plan originally devised by Adolf Hitler in order to suppress the resistance in Eastern Europe (Glišić, 1970). The main casualties of this crime were the male population of Kragujevac and nearby villages, ranging in age from twelve to sixty-five.

In 1953, the Kragujevaki Oktobar Memorial Park was created covering an area of 352 ha. Total of 30 mass tombs are located there. (Kragujevački oktobar Memorial Park, 2023). The area has been laid out by the urban project of two architects Mihailo Mitrović and Radivoje Tomić. To date, ten sculptural-architectonic pieces have been built over ten of the tombs. A true emblem of the city is one of them, the Monument to the Shot Pupils and Teachers (Martinović, 2013). Apart from the main museum building, there are memorials in the memorial park, such as the Monument of Pain and Defiance, Crystal Flower, Stone Sleeper and A Hundred for One. The Memorial Park was declared a Cultural Heritage of Extreme Importance on 27th December 1979 (Kragujevački oktobar Memorial Park, 2023) (Figure 1).

On February 15, 1976, the 21. Oktobar Museum was established in the Memorial Park with the purpose of collecting, processing, preserving, and presenting the records pertaining to the shooting and the victims through displays and written materials. Additionally, the Park organises traditional manifestations every year on 21st October, when, inspired by the event, many foreign visitors come to Serbia. Every year since 1971, on the grounds surrounding the Monument to the Shot Pupils and Teachers, the main manifestation called the Great School Lesson has been held. Famous actors, opera singers, and choirs perform original pieces with uplifting themes in honor of the Kragujevac students and citizens. The pieces were composed by renowned domestic and international composers (Kragujevački oktobar Memorial Park, 2023).

Figure 1: Location of the Kragujevački oktobar Memorial Park

Source: Authors' adaptation of MapChart.net

The purpose of the Memorial Park is to preserve and honor the memory of this awful incident, as well as to inform and mobilize the next generation to prevent such a crime from happening again (Kragujevački oktobar Memorial Park, 2023). According to the most recent statistics, school field excursions were the main reason that students visited the Memorial Park over the past ten years, making it a mandatory stop for most Serbian primary schools because of the park's educational capacity (Dimitrovski et al., 2014).

4. Methods of research

The survey presented in the research employed an anonymous questionnaire (Millán et al., 2021). The questionnaire was first developed in .doc format and then exported in electronic form. The cover page instructed participants to provide a truthful answer on whether they had visited the Memorial Park. The respondents were informed about the type and duration of the questionnaire, as well as the protection of their data. They were free to accept or decline participation, without explanation (Karacic & Oreskovic, 2017). A questionnaire was created on a Google form (Google Forms, Google, Inc., USA) which accepted only the answers provided by the tourists who had visited the sight. The form of the questionnaire was created so that anonymity was guaranteed with the option not to collect emails (Makwanise & Masunda, 2023). Apart from emails, participants did not leave any personal information. The data collection process began on June 5, 2022, when it was sent to 355 email addresses. The eliminatory question was about everyone who visited the Memorial Park in the past two years. The spread of the SARS-CoV-2 virus made it very difficult to collect data from a large on-site sample. Therefore, the sample consists of 112 respondents.

A review of recent literature on dark tourism indicates an increasing academic interest in this topic. Most of the findings are related to motivation and interest in learning, education, cultural heritage and understanding of dark tourism events (Stone & Sharpley, 2008). The idea of applying correlation and factor analysis arose from the results of Kang et al. (2012) and Lewis et al. (2021). In addition to these studies, Zheng et al. (2018) investigated the motivation of dark tourism using a 5-point scale through correlation by adding the value of Cronbach's alpha coefficient, which was also applied in this paper. The greatest contributions of the research are the relationships between motivation and the positive and negative factors that create the motivation. Moreover, Tang (2014) significantly emphasised the importance of the correlation between motivation, experience and benefits in dark tourism locations. In line with our study, this author also uses correlation, whereby the analysis is also preceded by the calculation of Cronbach's alpha coefficient and Kaiser Normalisation for varimax rotation (KMO). The current survey had four categories of questions. The first one focused on the reasons for visiting the site, the visitors' activities on the site and the settings of the occasion, and the second group of questions focused on cognitive on-site experiences, as well as visitors' thoughts and attitudes. The third group of questions was related to affective experiences, whereas the fourth concerned the benefits gained from visiting the site.

The majority of the survey participants were female (70.5%). As for the age range, 32.1% of the participants were 41 to 50 and 30.4% of them were 51 to 60, which makes this survey mostly answered by mature adults from many different walks of life, with various life experience. Regarding the level of education, 34.8% of participants had a bachelor's degree, and 20.5% had a master's degree. The results point to the fact that the participants are quite highly educated and, as such, have more academic knowledge and world experience, which has helped them decide what to look for, or notice while travelling. Upon completion of the gathering process, the data were processed and analysed by use of the Statistical Package for the Social Sciences (SPSS, version 26). The exploratory factor analysis allowed a reduction in the number of key items. Accordingly, the following reductions have been made: reasons to visit - from 8 to 3; cognitive experiences - from 12 to 3; affective experiences - from 10 to 3 and gained benefits - from 15 to 4 dimensions. Using Pearson's correlations these dimensions as well as their interrelationships were examined.

5. Research results and discussion

Four different levels of the benefit-based approach were identified within the research, i.e. reasons for visiting, the setting, experiences and gained benefits upon visiting the Kragujevački oktobar Memorial Park. By identifying these four factors, it was possible to examine their relationships and the way they correlate with each other. The setting factor was considered to be a fixed one, which lead to the research being primarily focused on the relationship between *reasons for visiting the site* (R), and visitor *experiences* (TA & E) as well as *gained benefits* (GB) from their visit and such experiences.

Table 1 indicates three key dimensions of reasons to visit, i.e. *willingness to learn*, *general interest in ideological conflict* and *moral obligation to get informed and visit the site*. These reasons were related to cognitive and affective experiences to the highest degree. *Willingness to learn more about the incident* was not as significantly associated with the other six dimensions representing cognitive and affective experiences as some of the other reasons to visit, e.g. the factor of *innocent victims of the incident* proved not to be significant. However, the factors of *the way of life during the period of the incident* $(r(112) = 0.208, p<0.05)$ and *the importance of education* $(r(112) = 0.271, p<0.01)$ both have a strong positive correlation with the factor of learning (RL). Such findings are in line with Zheng et al. (2020), who pointed out that the places of death from the perspective of tourists become very significant in the impact of emotional experiences in dark tourism.

When it comes to affective experiences related to *sadness because of the circumstances people were in to fight each other* (AS) $(r(112) = 0.323, p<0.01)$, *the obtained results point to their importance to the research.* Namely, the correlation coefficients for affective experiences related to *compassion for the innocent victims* (AC) and *empathy with the painful lives of the survivors* (AE) proved to be $r(112) = 0.194, p<0.05$, *i.e.* $r(112) = 0.195, p<0.05$, respectively. All six examined dimensions have a positive relationship with *learning*

(RL), the strongest being the relationship between *learning* and *sadness because of the circumstances people were in to fight each other* (AE) (0.323), while the weakest proved to be the relationship between *learning* (RL) and *compassion for the innocent victims* (AC) (0.194).

The next factor to be observed is *general interest in ideological conflict (RH)*. It was more strongly associated with the same six dimensions compared to RL. Thus, the following correlation coefficients for the observed dimensions were calculated: *innocent victims of the incident (r(112) = 0.267, p<0.01); the way of life during the period of the incident (r(112) = 0.238, p<0.05); the importance of education (r(112) = 0.380, p<0.01);* in regard to affective experiences: *sadness because of the circumstances people were in to fight each other (r(112) = 0.318, p<0.01); compassion for the innocent victims* again is not a significant dimension *(r(112) = 0.150, p<0.05);* while *empathy with the painful lives of the survivors* is *with r(112) = 0.260, p<0.01*. This means the strongest relationship for the factor of *RH* is the *importance of education (CE) (0.380)* and the weakest relationship is the one between *RH* and *way of life during the period of the incident (CL) (0.238).* These results coalign with Bowman and Pezzullo (2009) who maintain that a trip aimed at researching dark tourism is a redirection of the gaze from a tourist tour to a real representation of the history of a tourist destination.

Lastly, the *moral obligation to get informed and visit the site (RO)* had the strongest association with the six mentioned dimensions belonging to the factor of the *reasons to visit.* Thus, the calculated correlation coefficients are as follows: *innocent victims of the incident - r(112) = 0.438, p<0.01; the way of life during the period of the incident - r(112) = 0.295, p<0.01; the importance of education - r(112) = 0.383, p<0.01; sadness because of the circumstances people were in to fight each other - r(112) = 0.461, p<0.01; compassion for the innocent victims - r(112) = 0.306, p<0.001;* and *empathy with the painful lives of the survivors - r(112) = 0.331, p<0.01*. All of the six dimensions in correlation to the RO had a strong association, with the relationship between the RO and AE being the strongest (0.461) and the relationship between RO and CL being the weakest. The findings are in line with Lewis et al. (2021) who showed that the dark experience is the most influential construct of dark tourism tested through the method of factor analysis.

Table 1: Correlation test between Reasons (R) and Experiences (TA & E)

		Cognitive			**Affective**		
		CI	**CL**	**CE**	**AS**	**AC**	**AE**
RL	Pearson Correlation	0.102	0.208*	0.271**	**0.323****	0.194*	0.195*
	Sig. (2-tailed)	0.283	0.027	0.004	0.001	0.041	0.040
	N	112	112	112	112	112	112
RH	Pearson Correlation	0.267**	0.238*	**0.380****	0.318**	0.150	0.260**
	Sig. (2-tailed)	0.004	0.011	0.000	0.001	0.114	0.006
	N	112	112	112	112	112	112
RO	Pearson Correlation	0.438**	0.295**	0.383**	**0.461****	0.306**	0.331**
	Sig. (2-tailed)	0.000	0.002	0.000	0.000	0.001	0.000
	N	112	112	112	112	112	112

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)
Source: Authors' research

Similarly to the previous relationships, Pearson's correlation was also used to determine the significance of the relationships between the six dimensions of visitor experiences and the four dimensions of gained benefits. The results in Table 2 indicate a strong correlation between the before-mentioned dimensions.

The factor of *innocent victims* (CI) was significantly associated with all four dimensions of gained benefits. Thus, the calculated correlation coefficients are as follows: *realised how terrible the incident that took place in the destination was* (GT) - $r(112) = 0.554$, $p<0.01$; *learned that a large number of innocent people lost their lives in the incident* (GS) - $r(112) = 0.383$, $p<0.01$, *gained an insight into the tough lives of one's ancestors* (GL) - $r(112) = 0.330$, $p<0.01$ and *understood the value of peace* (GP) - $r(112) = 0.451$, $p<0.01$. For the first dimensions in the table, the strongest relationship can be noticed between CI and GT (0.554), while the weakest is the one between CI and GL (0.330). The factor of *the way of life* (CL) was also significantly associated with the four dimensions: *terrible incident* (GT) ($r(112) = 0.239$, $p<0.05$); *innocent people* (GS) ($r(112) = 0.230$, $p<0.05$); *tough lives* (GL) ($r(112) = 0.237$, $p<0.05$); and *the value of peace* (GP) ($r(112) = 0.209$, $p<0.05$). CL has the highest correlation coefficient with GT (0.239), while the lowest correlation coefficient is with GP (0.209). The third dimension, *the importance of education* (CE) is more strongly associated with the given four dimensions compared to CL which is illustrated by the following correlation coefficients: *the terrible incident* (GT) - $r(112) = 0.474$, $p<0.01$, *innocent people* (GS) - $r(112) = 0.337$, $p<0.01$, *tough lives* (GL) - $r(112) = 0.378$, $p<0.01$ and finally, (GP) - $r(112) = 0.479$, $p<0.01$. The last of cognitive experience dimensions shows the strongest correlation coefficient with GP (0.479) and the lowest correlation coefficient with GS (0.337), which is still considered a strong association.

Further insight into the data presented in Table 2, points to a rather strong relationship between the three dimensions related to affective experiences and gained benefits. When it comes to the affective experiences noted by the visitors, *sadness because of circumstances* (AS) is very strongly associated with the dimensions of *gained benefits, i.e. terrible incident* (GT) ($r(112) = 0.498$, $p<0.01$); *innocent people* (GS) ($r(112) = 0.448$, $p<0.01$); *tough lives* (GL) ($r(112) = 0.471$, $p<0.01$) and *value of peace* (GP) ($r(112) = 0.571$, $p<0.01$). Albeit all of the dimensions have a strong relationship with AS, the strongest one is between AS and GP (0.0.571), while the weakest relationship is between AS and GS at (0.448). As indicated by the obtained data, *compassion for innocent victims* (AC) has the strongest significance related to the *gained benefits*: *terrible incident* (GT) ($r(112) = 0.516$, $p<0.01$); *innocent people* (GS) ($r(112) = 0.467$, $p<0.01$); *tough lives* (GL) ($r(112) = 0.323$, $p<0.01$) and lastly *value of peace* (GP) ($r(112) = 0.648$, $p<0.01$). When it comes to the next relationship, the strongest was the one between AC and GP, which was overall the strongest relationship in the table (0.648) and the weakest one for these dimensions is the relationship between AC and GL (0.323). The final dimension in the table *empathy with the painful lives of the survivors* (AE) shows a strong correlation with the four dimensions of *gained benefits*, but a less strong one than the previous dimension. This affective experience dimension records the following coefficients: for *the terrible incident* (GT) - $r(112) = 0.410$, $p<0.01$; for *innocent people* (GS) - $r(112) = 0.415$, $p<0.01$; for *tough lives* (GL) - $r(112) = 0.451$, $p<0.01$ and finally, for *the value of peace* (GP) it shows the coefficient of - $r(112) = 0.407$, $p<0.01$. In this final correlation, the strongest relationship can be observed between AE and GL at (0.451), while the weakest is the one between AE and GP at (0.407).

Table 2: Correlation test between visitor experiences and gained benefits

		GT	GS	GL	GP
CI	Pearson Correlation	0.554**	0.383**	0.330**	0.451**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000
	N	112	112	112	112
CL	Pearson Correlation	0.239*	0.230*	0.237*	0.209*
	Sig. (2-tailed)	0.011	0.015	0.012	0.027
	N	112	112	112	112
CE	Pearson Correlation	0.474**	0.337**	0.378**	0.479**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000
	N	112	112	112	112
AS	Pearson Correlation	0.498**	0.448**	0.471**	0.571**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000
	N	112	112	112	112
AC	Pearson Correlation	0.516**	0.467**	0.323**	0.648**
	Sig. (2-tailed)	0.000	0.000	0.001	0.000
	N	112	112	112	112
AE	Pearson Correlation	0.410**	0.415**	0.451**	0.407**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000
	N	112	112	112	112

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)
Source: Authors' research

Table 3 shows Cronbach's Alpha value, which is used to measure the reliability or the internal consistency of a questionnaire using the Likert scale. It is shown as a number between 0 and 1 and describes to which extent the items or the questions in the survey measure the same concept or construct (Tavakol & Dennick, 2011). Cronbach's Alpha value for this particular survey is 0.955 which is generally considered to be an exceptionally reliable score, which means the questions in the survey are indeed measuring the same concept.

Table 3: Cronbach's Alpha

Cronbach's Alpha	N of items
0.955	45

Source: Author's research

In order to better understand the reasons underlying visitors' choice to visit the observed dark tourism destination, first, it was necessary to evaluate the overall experiences the visitor would gather upon visiting the Kragujevački oktobar Memorial Park. To this end, an approach based on benefits from the visit was implemented and found to be effective. There were three dimensions related to the reasons for visiting the destination that stood out: to learn more about the incident itself, being interested in national history in general and feeling a moral obligation to get informed and visit the site. According to the authors, the obligation has not been found to be a reason for visiting other destinations of neither cultural nor other types of tourism. This means that dark tourism, albeit closely related to cultural tourism, is, in fact, independent, and has separate experiences that are unique to it.

It would be important to note that the main reason for visiting the site, i.e. learning about the incident, had the lowest correlation with cognitive and affective experiences. Still, when comparing its correlations between cognitive and affective experiences, it was more strongly associated with the latter ones, which implies that the visitors were more concerned with the incident itself and especially the victims, that they felt compassion and empathy for the victims, and their families, i.e. those who have been, in any possible way, affected by the incident. Being interested in national history was identified to be the second most popular reason to visit the site and as such, it also had the second highest correlation with the on-site experiences. Being interested in national history was found to have a greater effect on cognitive experiences compared to affective ones, which means the visitors who were interested in national history were more likely to have had their cognitive experiences met upon visiting the Memorial Park. The tourists that had been interested in national history as their main reason for visiting were especially concerned with the importance of education and the history of the innocent victims of the incident. Keeping in mind that obligation was the third most likely reason for visiting the site of the Memorial Park, it is important to note that it had the highest overall correlation with cognitive and affective on-site experiences, with tourists associating it with the affective side. Additionally, Serbia is a country with a very turbulent and unpleasant past and as such further develops the moral obligation a lot of people feel, to visit and learn more about its history, especially the tragic history of the Kragujevački oktobar Memorial Park. Furthermore, this is in line with the authors such as Thurnell-Read (2009) who has noted that a previous tragic event that had happened to a generation can later engender moral obligations in the generations that follow, motivating them to become more familiar, to learn, experience and commemorate that particular event and its victims, as well as to be more sensitive and sympathetic towards other incidents as well. There were four types of benefits that were most likely to be gained by the visitors: learning how terrible the incident was and how many innocent people lost their lives in the incident, gaining an insight into the tough lives of one's ancestors and understanding the value of peace (Kang et al., 2012; Min et al., 2021). All of the dimensions were strongly associated with each other but *realising how terrible the incident truly was* (GT) was particularly strongly associated with *innocent victims of the incident* (CI) and slightly less strongly with the *way of life during the period of the incident* (CL). The benefit of *learning more about the large number of innocent people that lost their lives in the incident and their history* (GS) was most strongly associated with affective experiences, especially the *compassion for innocent victims that were killed or injured during the incident* (AC). The next benefit that was observed was *gaining an insight into the tough lives of one's ancestors* (GL) which had a strong relationship of correlation with *empathy with the painful lives of the survivors who were physically or psychologically harmed during the incident* (AE). Understandably, with some remaining living victims and people who were alive during that period, the tragic tales of the incident are told to younger generations and it truly allows visitors to learn more about how their ancestors lived and what led to this incident to happen. The final benefit observed was *understanding the value of peace* (GP) which had a very strong relationship with all dimensions apart from *the way of life during the period* (CL). *Understanding the value of peace* (GP) had an especially high association with *compassion for innocent victims that were killed or injured* (AC) followed by *sadness because of the circumstance people were in to fight each other* (AS). Similar to Jamin et al. (2020), the findings indicate the importance and strength of the correlation between benefits, learning and psychological benefits. Generally speaking, the data from Table 2 indicate that when it comes to the effect of on-site experiences and their effect on the gained benefits, there is a noticeable difference in favour of affective experiences being more significant and being associated more highly with the mentioned benefits. In addition, the findings improve the understanding and significance of tourists' motivations for visiting dark places, enabling organisers to better manage and develop the attractiveness of dark tourist destinations (Min et al., 2021).

6. Conclusion

This research paper acts as a preliminary investigation into dark tourism in Serbia after the SARS-CoV-2 outbreak, and it can serve as a basis for any related studies in the future, both in Serbia and abroad. The benefit-based approach used in the paper proved to be an effective tool in understanding the motivation for travelling to Kragujevački oktobar Memorial Park, and getting a comprehensive review of the effects and experiences, both cognitive and affective, such travel has on tourists, and lastly, gaining an insight into the benefits achieved from visiting the site. The analysed data indicate the existence of a moral obligation to visit the site and learn more about the incident as the most highly associated reason to visit the Memorial Park, which is not commonly associated with leisure travel. Furthermore, this proves that dark tourism is, in fact, a unique and independent form of tourism that does not closely follow other subcategories of cultural or heritage tourism. Moral obligation or the personal duty that many people feel and later become visitors of such destinations needs to be recognised and taken into consideration from the aspect of tourism service providers and their target groups. As there has not been much research done to examine the correlation of personal or moral obligation as a motive for visiting dark tourism sites, this paper serves to provide evidence and justification for any further research. With all this in mind, this study has considered findings that will be meaningful for future research in the areas of dark tourism. The results significantly contribute to improving the understanding of the interpretation of dark research in the Republic of Serbia.

However, it would be important to note the difficulties and limitations the research has faced. Namely, talking about SARS-CoV-2, there were very limited numbers of visitors to the Memorial Park, and its museums and exhibitions. This made the data somewhat scarce and the survey sample was not as big as would perhaps be considered necessary. Once the tourism industry recovers after the pandemic, the study should be repeated, hopefully on a bigger scale. The expected data can be used to compare the two conditions – freshly out of the lockdowns and the pandemic, and the state after recovery, or perhaps pre-pandemic levels. In future research, the authors remain to enhance the quality of the research by using focus groups, bearing in mind that some authors (Light, 2017; Wyatt et al., 2022) prefer the use of focus groups in dark tourism research allowing for qualitative research.

As previously mentioned, the results of the study can help aid a better and more conclusive definition of tourism services for particular tourists by identifying their individual needs and wants as well as gained benefits and on-site experiences. As such, it can help both tourists and destination management by decreasing the gap of knowledge between the actual sought-after services and tourism products and the perception of the mentioned wants by the tourism service providers. Since the study has been conducted at just one of many dark tourism spots in Serbia, it is expected that its results can and will vary for other ethnicities and nationalities, as each has its own reasons and motivation for visiting the sites. Additionally, similar research will need to be conducted at other, similar destinations in Serbia and hence identify the differences in opinion even within the country's borders. Lastly, the study aims to help the overall development of tourism in Serbia, by drawing attention to and raising awareness of the existence of sites such as the Kragujevački oktobar Memorial Park.

In 2019, domestic tourists made up around 56% of the total 53,800 tourists who visited Kragujevac, whereas 44% were international visitors. The average stay was two nights and most tourists visited attractions such as Milošev venac, 21. oktobar Museum and Kragujevački oktobar Memorial Park (Vukašinović, 2020). On the other hand, according to the official Auschwitz-Birkenau State Museum, a total of 2,320 million visitors toured the Auschwitz Memorial and Museum in 2019 (Auschwitz-Birkenau, 2020). This information further proves the potential that dark tourism spots around the world hold and can even further be useful in creating appropriate strategies for promotion and investment.

Appendix

Table A: Descriptive statistics for *reasons for visiting* the *Kragujevački oktobar Memorial Park*

Item	Description	N	Mean	Std. Deviation
R1	To learn more about the incident	112	3.7143	1.21869
R2	Interested in national history	112	4.2768	1.01529
R3	Generally interested in ideological conflict	112	3.5982	1.19654
R4	To take part in an educational program provided by the group, organizer, school, etc.	112	3.2500	1.43634
R5	Brought by friends and/or family	112	2.7589	1.34396
R6	Brought friends and/or family	112	3.2679	1.30820
R7	Felt a moral obligation to get informed and visit the destination	112	3.6250	1.28837
R8	To spend the day with friends and family in a meaningful way	112	3.3571	1.30043
	Valid N (listwise)	112		

Source: Authors' research

Table A shows *reasons for visiting dark tourism destinations such as the Kragujevački oktobar Memorial Park.* It provides an insight into three factors as well as the corresponding descriptive statistics. There are three items with the highest means measuring reasons for visit: R1 (*M = 3.7143),* R2 *(M = 4.2768)* and R7 *(M = 3.6250),* while the two items with the lowest mean value are R4 *(M = 3.2500)* and R5 *(M = 2.7589).* The highest and lowest mean values indicate the reasons for visiting with the highest, i.e. lowest importance to the visitors, respectively.

Table B: Descriptive statistics of visitor cognitive experiences

Item	Description	N	Mean	Std. Deviation
TA1	Innocent victims of the the *Kragujevački oktobar Memorial Park*	112	4.4375	1.01148
TA2	Way of life during the period of the incident	112	4.1964	1.00305
TA3	Comparisons between life then and now	112	3.9732	1.12674
TA4	History of the Republic of Serbia	112	3.8304	1.31443
TA5	Ideological conflict in general	112	3.6696	1.25482
TA6	Human rights issues	112	3.9107	1.21961
TA7	Importance of education	112	4.2054	0.99674

TA8	Guilt and empathy system	112	3.9554	1.09370
TA9	The actual state of the destination and the expected state	112	3.9018	1.03070
TA10	The actually found content of the destination and the expected content	112	3.7946	1.13215
TA11	The impact of the incident on me personally	112	3.6964	1.30031
TA12	Hard life of my ancestors	112	4.0714	1.11270
	Valid N (listwise)	112		

Source: Authors' research

Table B serves to show the descriptive information about cognitive experiences the visitors had after visiting the destination and the items which were given the most or least amount of thought. There are three extracted factors for cognitive experiences and three items that had the highest mean: TA1 *(M = 4.4375)*, TA2 *(M = 4.1964)* and TA7 *(M = 4.2054).* On the opposite side, the two items with the lowest mean are TA5 (*M = 3.6696)* and TA11 *(M = 3.6964).* This means the items with the highest mean are thought about the most.

Table C: Descriptive statistics of visitor affective experiences

Item	Description	N	Mean	Std. Deviation
E1	A sense of fear from the cruel nature of the people who caused such a tragic event	112	3.8839	1.25738
E2	A sense of dread from the scenes of battle and carnage that took place at the destination	112	3.9821	1.14673
E3	Sadness because of the circumstances people were in to fight each other	112	4.3482	1.01084
E4	Surprised about the way of life of the locals at that time	112	3.3929	1.26175
E5	Compassion for innocent victims, killed, injured or those who have lost parents, family members, etc.	112	4.4554	0.93855
E6	Empathy with the painful lives of survivors who are psychologically or physically harmed by the incident	112	4.4018	0.90504
E7	Appreciation of today's quality of life	112	4.0000	1.12306
E8	Appreciation of the current state of peace in the country	112	3.9107	1.17445
E9	Depressed by the content and theme of the destination and exhibition	112	3.2411	1.27516
E10	Depressed by a small number of visitors to the the *Kragujevački oktobar Memorial Park*	112	3.5714	1.27847
	Valid N (listwise)	112		

Source: Authors' research

The results shown in Table C represent visitor *affective experiences (E)* and provide descriptive information as well as the three extracted factors. The three items with the highest mean value are E3 *(M = 4.3482),* E5 *(M = 4.4554)* and E6 *(M = 4.4018)*, whereas the two ones with the lowest mean value prove to be E4 *(M = 3.3929)* and E9 (*M = 3.2411).*

Table D: Descriptive statistics of visitors' gained benefits

Item	Description	N	Mean	Std. Deviation
GB1	Realized how terrible the incident that took place at the destination was	112	4.3482	1.02851
GB2	Learned that a large number of innocent people lost their lives in the incident	112	4.4554	0.89933
GB3	Gained a deeper understanding of how and why the event took place	112	3.9821	1.18536
GB4	Changed one's own view and understanding of the incident	112	3.3750	1.41501
GB5	Learned the history of the destination	112	3.9286	1.20595
GB6	Understood the problems of ideological conflict and human rights	112	3.5714	1.27847
GB7	Fulfilled the moral obligation to visit the destination as a local	112	3.3750	1.49549
GB8	Comfort from sharing the pain and sorrow of the incident with others	112	3.5268	1.28722
GB9	Grateful there were no members of one's family among the victims	112	3.9821	1.32190
GB10	Understood the value of family	112	4.0089	1.32540
GB11	Gained an insight into the tough lives of one's ancestors	112	4.0357	1.22238
GB12	Felt gratitude for living in today's age	112	3.9554	1.24037
GB13	Understood the value of peace	112	4.3929	0.96195
GB14	Meaningfully spent the day	112	3.8839	1.21363
GB15	Had a nice time with family, relatives or friends	112	3.7411	1.24297
	Valid N (listwise)	112		

Source: Authors' research

Table D shows the *gained benefits (GB)* the tourists felt after having visited the *Kragujevački oktobar Memorial Park*. The four items with highest mean values are GB1 *(M = 4.3482)*, GB2 *(M = 4.4554)*, GB11 *(M = 4.0357)* and GB13 *(M = 4.3929)*. On the other side, the three items with the lowest mean values are GB4 *(M = 3.3750)*, GB7 *(M = 3.3750)*, and GB8 *(M = 3.5268)*.

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Conflict of interest

The authors declare no conflict of interest.

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Digital security of the hotel brand

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Abstract: This article is devoted to the study of the brand digital security and its impact on the business processes of hotel businesses. The emphasis is on the fact that digital communications as key drivers of the sales system create increased risks to the security of the hotel business. The cost markers of hotel brands, operating in the market of hotel services of Ukraine in the dynamics of the pre-quarantine and post-quarantine periods are estimated. The structure of the capital's hotel services market by categories and price segments has been studied. There are described the factors related to the formation of the system of protection quality of content and information at different levels of formal and informal communications, necessary for providing digital security of the hotel brand. There are offered possible ways to increase the level of digital security based on the implementation of cyber resilience tactics in hotels, based on brand carriers and risk categories, as well as monitoring and control of informal communication channels.

Keywords: hotel brand, digital security, cyberspace, Ukraine
JEL Classification: F52, H56, D73

Digitalna sigurnost hotelskog brenda

Sažetak: Ovaj rad je posvećen proučavanju digitalne bezbednosti brenda i njegovog uticaja na poslovne procese hotelskih preduzeća. Akcenat je na činjenici da digitalne komunikacije kao ključni pokretači prodajnog sistema stvaraju povećane rizike po bezbednost hotelskog poslovanja. Procenjuju se odrednice troškova hotelskih brendova koji posluju na tržištu hotelskih usluga Ukrajine kada je u pitanju njihova dinamika u periodu pre i posle karantina. Proučavana je struktura tržišta hotelskih usluga prestonice države po kategorijama i segmentima cena. Opisani su faktori koji se odnose na formiranje sistema zaštite kvaliteta sadržaja i informacija na različitim nivoima formalnih i neformalnih komunikacija koji su neophodni za obezbeđivanje digitalne bezbednosti hotelskog brenda. Ponuđeni su mogući načini povećanja nivoa digitalne bezbednosti na osnovu implementacije taktike sajber otpornosti u hotelima koja se bazira na nosiocima brendova i kategorijama rizika, kao i praćenju i kontroli neformalnih kanala komunikacije.

Ključne reči: hotelski brend, digitalna sigurnost, sajber prostor, Ukrajina
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1. Introduction

Brand forming is an imperative for the successful operation and development of a business, which often becomes a working intangible asset and brings additional income, providing the commitment of consumers. Maintaining a positive brand reputation is a difficult task in today's environment, particularly in cyberspace. After all, the main communications in the conditions of the pandemic lockdown and the war in Ukraine today have moved to the Internet environment (Prokopyuk & Chernysh, 2023). This situation provoked waves of cyber-attacks and cyber incidents (Upadhyay & Rathee, 2022). Therefore, to be an asset, brand communication platforms must become secure. In Ukraine, hotel chains are represented by both national and international brands that survived the difficult times of quarantine, and today are under the influence of constant physical threats of destruction and information wars as a result of Russia's military aggression. This led to the cessation of tourist flows – sources of loading the room stock. Therefore, the relevant task in the current perspective is to work on strengthening and developing the brand, managing databases with customer-oriented remote service, as well as protecting the brand from various threats that cause reputational and financial losses.

Oversaturation of information content, hybrid threat, cybersecurity, social engineering and digital transformation are manifestations of online communication that are progressing under the influence of pandemic quarantine. Until recently, the Internet was a promising information application, and today it often becomes a source of risks and a tool for the most powerful manipulators that can harm the brand (Odarenko & Vasylyshina, 2023). Therefore, the identification of threat sources and potential risks, brand security management is an urgent tactical and strategic task for economic entities, including the hotel business.

Thus, the main goals of the research are to formulate the definition of "digital brand security", to identify and categorize cyber risks, as well as to form approaches to ensuring the security of the hotel brand in today's realities.

2. Literature review

With the transition to a new reality in the relations of brands with consumers and stakeholders, that is, to online communications, cyber security issues become the focus of scientific research and practical insights. The main activity in the academic field falls precisely on the COVID frame time. Thus, opportunities, which mean threats in the process of accelerating digital transformation, as well as the impact on cybersecurity are described in the works of Wilson (2020) and Kalamkar and Prasad (2022). A study of awareness and understanding of information security threats in the small business sector, as well as recommendations for the formation of proactive mitigation strategies, was demonstrated in his work by Ncubukezi (2022). The security of data resources, which must be organized and at the same time characterized by confidentiality, integrity and availability, is characterized by Antczak (2022), Gawade and Shekokar (2022), Köse (2023), Mouloudj et al. (2023) and Sakhnini and Karimipour (2020).

Regarding hotel brands, the impact of the pandemic is also covered widely enough in the scientific literature and is represented by studies of a regional nature by Ghazali and Ishak (2021) – Malaysia; Khasaia and Nana Kvirtia (2021) – Georgia; Choirisa (2022) – Indonesia; Coutinho dos Santos et al. (2023) – Portugal; Kanamura (2023) – Japanese and US and others.

There is a dearth of scientific research on the cyber security of hotel brands during the global Covid-19 pandemic, and in particular military action. The articles of Arcuri et al. (2020) and

Gwebu and Barrows (2020) studied cyber attacks in the field of hospitality, while McCartney and McCartney (2020), Thomaidis (2022) and Verezomska et al. (2022) investigated the issue of cyber protection of hotel brands. With the development of artificial intelligence and its implementation in business management systems (Köse, 2023; Sakhnini & Karimpour, 2020), the issue of cyber protection will be constantly updated and will require innovative approaches in managing the security of hotel brands.

There are aspects of the hotel business as brand and security that are relevant for scientific development. Thus, the formation and promotion of the brand is quite a popular topic: branding issues are covered in the works of Faivishenko (2020), Karachyna (2017), Upshow (2015) and others. Peculiarities of brand communication support are reflected in the works of Ovsiienko (2021) and Shapovalenko (2013). In particular, the brand's communication strategy in the digital space was the subject of research by Buryak (2019), who identified points of contact with the consumer in brand perception: advertisements, news, conversations with family and friends, personal experience, etc., while Kirnosova (2021) examined the issue of brand authenticity in the communication policy of the enterprise. During the pandemic lockdown and the beginning of the war in Ukraine, the digital space expanded, as did the number of points of contact between the brand and the consumer. At the same time, a large amount of information comes from channels that brand owners do not control (Buryak, 2019). Therefore, ensuring the security of the brand is relevant today and requires special attention because you can lose consumer loyalty at the same time due to a cyber-attack, cyber incident, inadequate posting on social media, etc. In this perspective, important developments include studies by Sosnovska (2015), Tretyak and Gordiienko (2010), Zaichenko and Dima (2021), who studied theoretical issues of economic security of enterprises; Dovbnia and Hichova (2008) examined – the diagnostics of economic security of the enterprise, while Malyuk and Varypaieva (2019) and Sahirova (2021) discussed problems in ensuring the security of hotel and restaurant business services.

These scientific sources allow a detailed approach to the theoretical basis and formulate the practical feasibility of this publication, which is the relevance of identifying and categorizing risks to ensure the brand and approaches to the brand security management. The transition to digital relations, accelerated by pandemic quarantine and exacerbated by the war in Ukraine, has created many threats to business security, including reputational and financial losses. The number of cyber-attacks and cyber incidents that the hotel management has to deal with on its own has increased because such crimes often remain unsolved. Given that brands in the domestic hospitality industry have been actively developing and have positive prospects after the occupation attacks, despite the risks of destruction of property assets, protecting their intellectual property becomes a strategic task of the hotel management. For theoretical research on brand security, it is necessary to determine the key categories and concepts that form the basis of research.

Contamination of the term "brand security" involves consideration of its individual components: brand and security. Linguistically, a brand is defined as a marking, a way of identifying products (Karachyna, 2017). Practical approaches demonstrate the following points of view on the brand: for marketers – a set of product qualities that make each purchase offer unique and recognizable; for strategists – a way of managing the relationship between the organization and its target audience (Web-promo.ua, 2022).

Many scientists tend to interpret the brand as a trademark that has already gained popularity, embodies the trust of the buyer through the right marketing strategy, etc. (Table 1).

Table 1: Semantic analysis of the concept of "brand" in the scientific literature

Author	Brand – is …	Key characteristics
Anholt (2007)	a special name or symbol intended to identify the goods or services of one seller or a group of sellers, as well as to differentiate these goods or services from similar products of competitors	Differentiation and identification
Brubaker et al. (2014)	a name, term, symbol, image or combination of these elements, designed to identify goods or services of a particular manufacturer and differentiate them from competitors	
Razumov (2022)	a set of a name and other features (brand identity, logo, slogan, symbol, corporate identity, etc.) of the company or its products, forming a holistic image that determines their differences from competitors in the perception of potential consumers	
Ogilvi (2007)	elusive set of product qualities, its name, packaging and price, its history, reputation and methods of advertising	Identification and advertising
Moroz (2003)	a consistent set of functional, emotional, psychological and social promises to the target consumer that are unique and meaningful to them and best meet their needs	Emotional impact on consumer needs satisfaction
Kapferer (2017)	a name that influences the behavior of market buyers, becoming a criterion for purchase	Emotional consumer choice
Tamberh & Badyn (2015)	the result of communicative influence, which is in the creation of a unique and attractive image of the object of consumption	The result of communicative influence
Zozulyov & Nesterova (2018)	successfully differentiated brand, which in the minds of consumers is associated with certain advantages and benefits, clearly distinguished from competing brands and characterized by a high level of loyalty from consumers	differentiated brand that creates high loyalty through the benefits and advantages
Davis et al. (2002)	intangible but critical to the organization component that it owns, and is a kind of contract with the consumer about the level of quality and value received by them, inherent in the goods or services of this organization	Intangible contract, which confirms the quality and value of the product

Source: Compiled by the authors

The concepts presented in Table 1 allow us to formulate a complementary definition of a brand: an intangible asset that identifies the value of the object (location, business, product, etc.) through communicative influence on the consumer, forming his a priori or a posteriori inclination (loyalty). The hotel brand is an image of the expected comfort and atmosphere in the premises (lobby, room, restaurant, etc.) and a certain level of service, which is confirmed by its category and consumer experience of online audiences (reviews on the site, reviews, social media, distribution platforms). etc). Regarding the term "digital security", comparative studies, according to scientific sources (Table 2), show a fairly wide range of meanings.

Contamination of the structural elements of the presented approaches (Table 2) allows us to interpret digital security as a set of measures to protect, defend, prevent and neutralize threats to the subject from the likelihood of harm, damage to its interests and property during using cyberspace.

Table 2: Comparative analysis of the concept of digital security

Source	**Definition**	**Structural elements**
	Safety – is …	
Cambridge dictionary	things that are done to secure someone or something; a situation in which something is likely to fail or be lost; self-confidence and the situation in which you are; protection of information from theft, used illegally or illegally	security, situation of probable failure / loss; protection
Malyuk & Varypaieva (2019)	absence of any kind of danger and threat that can cause unacceptable damage (damage)	absence of danger and threat
Tyhiy (2016)	captures the dominant way of existence of the object as a state in which someone, for some reason is not in danger	as a state when there is no danger
	Industrial safety – is …	
National standard of Ukraine-DSTU 2293 (2014)	protection of life, health of workers and other people and / or property from the influence of harmful and dangerous production factors	protection from the influence of harmful and dangerous factors
	Economic security – is …	
Dovbnia & Gichova (2008)	An ability of the enterprise to effective functioning (now) and successful development (in the future)	effective functioning and development
Sosnovska (2015)	universal category that reflects the security of the subjects of socio-economic relations at all the levels, starting from the country to each of its citizens	security of subjects
Tretyak & Gordiienko (2010)	transformations aimed at improving the functioning of individual enterprises, their associations and entrepreneurs	transformations aimed at improvement
	Informational security – is …	
Rohova (2020)	public relations on the creation and maintenance of the regime of information systems, telecommunications systems; a set of measures to protect, defend, prevent and overcome natural and socio-genic threats	a set of measures to protect, defend, prevent and overcome threats
	Cyber-security – is …	
Law of Ukraine	protection of vital interests of people and citizens, society and a country during the use of cyberspace, which ensures sustainable development of information society and digital communication environment, timely detection, prevention and neutralization of real and potential threats to national security of Ukraine in cyberspace	the state of interest protection during using cyberspace
Indevlab (2022)	protection against viruses, hacker attacks, data forgery, which can apart from deleting / stealing data, but also affect the work and productivity of employees, use information against a person or structure, and stop production	protection against viruses, hacker attacks, data forgery

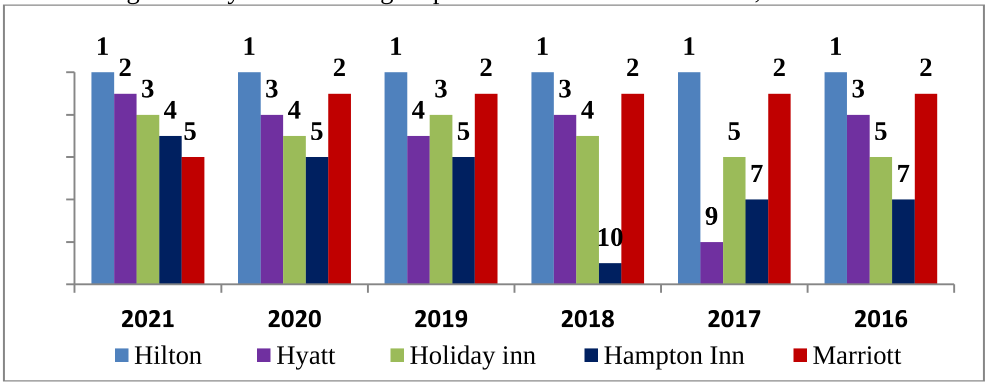
Source: Compiled by the authors

3. Results and discussion

Brand safety is ensured by a set of measures, the main task of which is to protect the brand from the information environment that negatively affects its image and mission: mentioning the hotel in content that contradicts its policy and corporate culture, etc. This challenge requires online marketing activity in an environment that is compatible with the brand and promotes its values. The biggest reputational threats posed by the Internet environment concern well-known brands. Cybersecurity experts note that hackers are targeting large corporations, with online fraud increasing by 12% year-over-year, including loyalty programs, by 89% (Edgedefense, 2023). Information attacks, hacking of online platforms and databases are initiated and carried out by both competitors and criminals for the purpose of blackmail or other fraud. In addition, the hacking of customer databases and their accounts is aimed at seizing customer funds, the hotel brand itself, spoiling the hotel's image and reputation as a partner. Indeed, in 2018, Marriott announced a security incident in its guest reservation database. The unauthorized access to the database, which contained guest information, took place between 2014 and 2018 (Marriott, 2018). Loyalty and rewards programs are vulnerable for hotel brands because the hotel operator must constantly protect these rewards and loyalty accounts from hacking and theft by cybercriminals.

A separate point is the imitation of the website (brand book) of the hotel brand. To this end, it is important to study the top brands that have a significant customer base and significant cash flows – which means that they are the targets of cybercrimes and require the development of cyber protection and insurance measures. In particular, bright representatives of hotel brands are international hotel operators. According to the annual report on the most expensive and strongest hotel brands in the world (Brandirectory, 2021), the TOP-5 rating scale for the past 6 years looks as follows (Figure 1).

Figure 1: Dynamic ranking map of international hotel brands, 2016-2021



Source: Brandirectory (2021)

The analysis shows that in 2016-2021 the top positions of the rating do not change, which indicates the stability of hotel operators in the world market. Hotel brands Hilton and Marriott remain the undisputed leaders, although the Covid-19 period significantly reduced their positions in 2021. The Standard & Poor's Credit Score Survey shows a rating of hotel brands, with the highest AAAs being those with the highest quality financial obligations and the highest level of bond reliability. Accordingly, in value terms, Hilton retains the status of the most expensive hotel brands in the world (Table 3), despite the loss of capitalization by 30% compared to 2020.

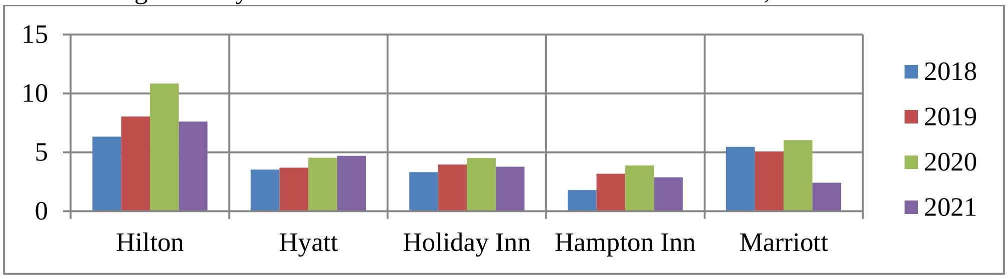
Table 3: Evaluation markers of brands of international hotel operators for 2018-2021

Rating in 2021	Brand name	Brand evaluation parameters	Years			
			2018	2019	2020	2021
1	Hilton	value, billion dollars	6,330	8,023	10,833	7,610
		credit scoring	AAA-	AAA-	AAA-	AAA-
2	Hyatt	value, billion dollars	3,512	3,677	4,532	4,695
		credit scoring	AA+	AA	AA	AA+
3	Holiday Inn	value, billion dollars	3,292	3,945	4,496	3,776
		credit scoring	AAA	AAA	AAA-	AAA-
4	Hampton Inn	value, billion dollars	1,784	3,182	3,871	2,863
		credit scoring	AAA-	AAA-	AAA-	AAA-
5	Marriott	value, billion dollars	5,464	5,039	6,028	2,408
		credit scoring	AAA-	AA+	AA+	AAA-

Source: Brandirectory (2021)

Therefore, the hotel brands in question remain the focus of cybercrimes. In total, the cost of the world's 50 most expensive hotel brands fell by 33% ($ 22.8 billion) as a result of the pandemic. The Hyatt brand is the fastest growing in the TOP-10 and one of the two brands that recorded an increase in its value by 4% (Figure 2).

Figure 2: Dynamics of the value of international hotel brands, 2016-2021

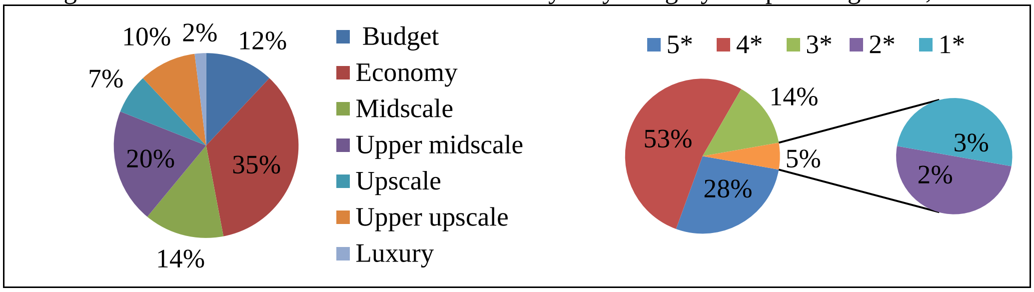


Source: Brandirectory (2021)

However, despite the pandemic crisis, the need to protect customer databases, loyalty and rewards programs, as well as the financial accounts of hotel brands still remains a priority for the management of hotel operators and the hotels that are part of their network. After all, the popularity of the brand is information for criminals that there is a significant financial benefit in case of hacking.

It should be noted that hotel operators shown in Figure 2, in addition to Hampton Inn, are represented in the hotel market of Ukraine, including the capital. Evaluating the hotel services market of the capital of Ukraine as the most economically attractive, it should be noted that there are some significant financial losses due to the pandemic quarantine over the past two years, but, nevertheless, it is less than in most of the larger European cities. Thus, in Prague, hotel occupancy in 2020 fell by an average of 4.6 times per year, in Warsaw – by 2.7 times, in Geneva – by 2.6 times, in Kyiv – by 1.9 times (Artbuild, 2021). However, the start of a full-scale war in Ukraine created a springboard for information attacks and hacking aimed at destroying the country's economy, in particular by destroying brands. Therefore, studying the listing of hotel brands in the capital of Ukraine is an urgent issue in the formation of cyber protection, in particular at the national level. Today, the Kyiv hotel market is represented in various price segments (Figure 3).

Figure 3: The structure of the hotel market in Kyiv by category and price segments, 2021

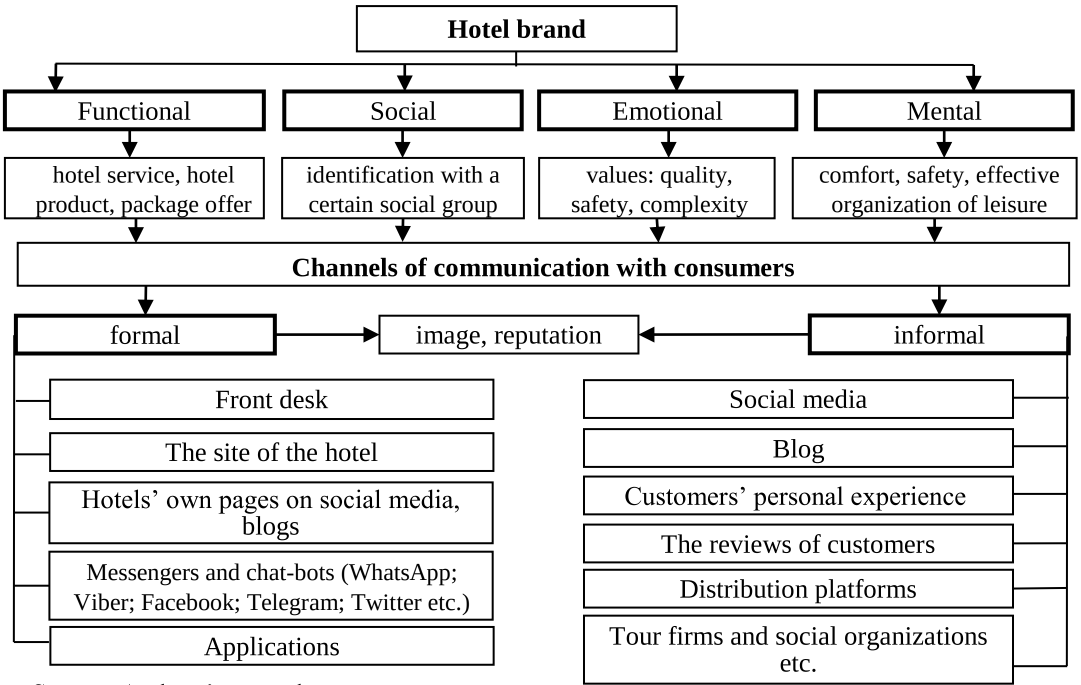


Source: Artbuild (2021)

Among the presented categories, in particular 3-, 4-, and 5- star hotels, there are domestic brands, represented by both chain and autonomous hotels. Among the chain ones, we should mention Premier Hotels and Resorts, Reikarts Holes Group, Black Sea Hotels Group, Royal Hotels and SPA Resorts, "7 days", which include brands differentiated by the level of comfort and regional distribution. If autonomous hotels personally take care of brand security, then for chain hotels it is a complex task, which consists of both individual and complementary brand security.

To form approaches to managing the security of the hotel brand, consider its components – potential sources of threats (Figure 4). At the same time, summarizing the image of the hotel product, its concept can be reflected as a four-dimensional adapted structure. In particular, formal communication channels are structured in the hotel services market by the hotel itself and with participants in economic interaction, including informing and consulting, influencing the creation of the concept of brand functionality. Informal – consumers, bloggers who form the social, emotional and mental values of the hotel product.

Figure 4: Sources of communication support for the hotel brand



Source: Authors' research

The above allows us to state that the digital security of a hotel brand depends on the quality of the content and information protection system at various levels of formal and informal communications. We summarized the processed information and systematized protection levels by protection objects (Table 4).

Table 4: Levels and objects of protection in the digital security system of the hotel brand

Objects of protection	**Protection levels**	**Characteristics**
Consumer interests	*Physical security (protection of property and values)*	– fire safety systems, control of the critical infrastructure of the hotel building (electricity, water, energy supply, etc.) and access to the hotel by third parties; – electronic (mobile) keys to hotel rooms; systems of protection of property and values of consumers
	Security of personal data (protection of guest privacy)	– system of protection of consumer profiles, information on the status and peculiarities of the stay of guests, etc.; – protection system of financial online transactions, personal accounts and electronic wallets, including cryptocurrencies
	Security of communication	– reliability of available information online and offline on sales channels; – CRM-platforms - systems of interaction with consumers; – established system of geoanalytics, geoservices and geomap; – complex service of feedback and NPS like Revision; – customer-oriented support (chat-bots, messengers, social networks) etc
Systems and resources of the hotel's internal environment	*Security of property and values of the hotel*	– internal system of protection and intrusion protection; – automated systems of accounting for the movement and reporting of tangible assets in different departments.
	Financial security	– system of protection of internal confidential information on the current financial condition, data transmission of a commercial nature, etc.
	Informational security	– anti-virus data protection databases on internal servers; – protection against hacker attacks
	Security of the hotel product sales system	– coordinated functioning of the internal property management system (Internal Property Management System) with the network of distributors of hotel services; – established communication system on various platforms of aggregation of hotel services (OTA - online travel agents, IDS - Internet distribution systems, ADS - alternative distribution systems, GDS - global distribution systems (Amadeus, Saber, Worldspan, Galileo) – protection of the brand book (site) of the hotel
	Reputation and image security	– system of external communication with the mass media, society; – monitoring of content about the hotel brand in the information space

Source: Authors' research

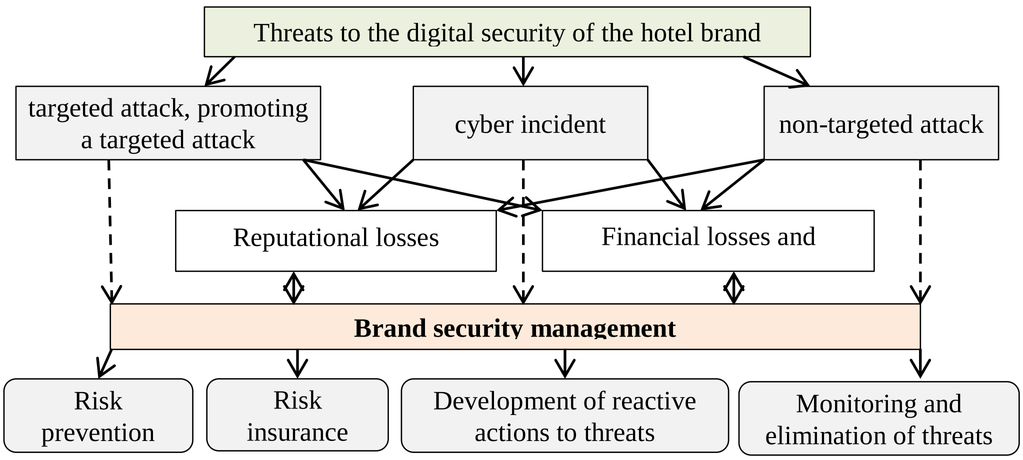
Each interpreted component involves the identification of interested parties at a certain level of protection. Thus, the consumer's interests include physical security (protection of property and valuables), which can be caused by cyber-interference in the hotel's integrated security system and giving criminals access to rooms, hidden cameras, safes, etc. Security of personal data, as already mentioned earlier, discloses commercial (current and card accounts, blockchain and electronic wallets, IP addresses, accrued rewards, etc.) and personal information about the hotel's customers, partners and beneficiaries (owners). This information can lead to money theft, data corruption, blackmail, etc.

The increase in demand for information from all parties (hotel brands, their customers and stakeholders) has drawn attention and raised concerns about security, as noted by many of the scientific studies we reviewed (Arcuri et al., 2020; Gwebu & Barrows, 2020; Ncubukezi, 2022) The digital dependency created by online communications facilitates attackers to exploit vulnerabilities in every sector (Kalamkar & Prasad, 2022), including the operation of hotel brands. Therefore, the determinant of the cyber security of a hotel brand is its internal business processes and communication platforms.

The results of our research in the academic field showed that a pandemic crisis, multiplied by a military one, destabilizes the work of hotel brands at various points of contact in the communication process (Prokopyuk & Chemsysh, 2023; Ulynets, 2022): 1) staff as a bearer of the brand in a crisis situation do not have coherent position and script for response and action, and therefore can spread misinformation and rumors; 2) partners and counterparties who do not understand internal processes in the hotel may refuse to cooperate; 3) media workers and the public, who can spread unreliable data, unsupported by comments and facts; 4) clients with whom communication can be completely lost. Therefore, the intellectual (in particular, informational) resources of the hotel brand, which are its property and communication tools, need cyber protection. And in the difficult crisis situation that the market of hotel services of Ukraine is experiencing today, the effective use of digital skills turns out to be a factor of sustainability (Bondarenko, 2021) of the hotel brand.

The application of the specified objects and risks requires the creation of a "layer" that will ensure cyber-protection of the hotel's digital security through the creation of countermeasures (insurance, withdrawal of assets to a safe digital/financial zone, etc.) and tools (antivirus, anti-hacker and other services and protection platforms). This allows us to state that the digital security management of the hotel brand will be aimed at achieving protection of the brand from possible reputational and financial threats and stress, provided by constant monitoring and controlling the communication process in particular information and cyber environment, business partners, etc. (Figure 5).

Figure 5: Model of digital security management of the hotel brand



Source: Created by the authors

Solving this current problem of digital security involves creating a favorable business environment, ensuring consumer loyalty, preventing conflicts of interest, distribution of managerial powers, etc., as well as a rapid response to new environmental challenges (war, pandemic, innovation, increasing the role of human intelligence, globalization of the economy). Digital brand security management of the hotel brand is required through innovative digital methods and social technologies.

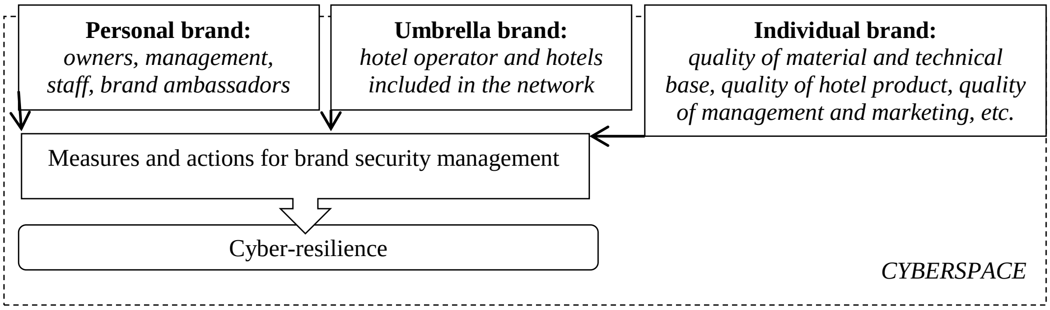
At the same time, risk prevention consists of their identification and categorization. Yes, they are divided into the following groups: business, organizational and technical (Mukherjee, 2019).

Business risks (or business process risks) are associated with economic activities and, when incurred, reduce the financial benefits and value of the brand, provoking financial losses. Organizational risks, in turn, are related to the hotel staff, as insufficient experience in cloud technology and cyberspace in general can lead to serious business disruptions. A separate point should be noted – organizational issues of the operational context of the hotel as a user and cloud provider. Technical risks include problems that may arise when interacting with cyberspace: the impact of malicious code on the cloud platform, attacks at the hypervisor level, data leakage, system failures or unauthorized transmission, and so on. In particular, the loss of privacy for the hotel will also mean reputational losses, which are almost impossible to recover.

In light of of recent events in Ukraine, we propose to identify more information and military risks. Many brands have left the Russian market amid strong international sanctions, condemning the war. Currently, there is no information about hotel brands and their motives in the Russian market, but, for example, Booking.com and Airbnb no longer allow you to search for and book accommodation in the Russia (Zaborona, 2022). Moreover, they inspired the purchase of beds in Ukraine, directing the funds to humanitarian causes. As for support activities, a volunteer headquarters have been set up in Odessa at the initiative of the Ribas Hotels Group (2022), and the Reikartz Hotel Group (2022) is hosting guests in areas far from fire with heightened security measures.

In view of the above, risk insurance is an important task of ensuring brand security, as insurance indemnities cover such hotel costs as (Mamonova & Pozdniakova, 2020): information security breaches due to viruses, destruction, modification or deletion of information, physical theft or loss of equipment; damage to software or computers; theft or destruction of information. In the event of a cyber-incident, there are costs for legal support, coverage of fines and penalties; legal costs related to liability for hacking a database of confidential information. In the case of phishing and karting technologies, which resulted in the loss of funds and assets of the hotel, prevention tactics (competent management of protection systems), insurance and rapid response to recover reputational and financial losses are also possible. Given the above areas of digital security management, we offer to implement in the hotel brand (personal, umbrella, individual) tactics of cyber resilience, based on brand carriers and risk categories (Figure 6).

Figure 6: Complementary tactics of cyber-resilience of hotel brand carriers



Source: Boyko (2010); Bovsh et al. (2021); Finansovaentsyklopediia (2021); Zozulyov & Nesterova (2018)

Thus, the management of formal channels of communication is to form a model of tactical behavior of all participants influencing the brand: personal, network and individual content in cyberspace must match and relate to the values and corporate culture of the hotel and society as a whole.

Regarding the management of hotel brand security through informal communication channels provides for the following actions (Koch, 2021; Ulynets, 2021):

1) digital hygiene: reputational protection against contact with Russian and Belarusian channels (consumers, marketplaces, etc.), placement on their own channels only verified and reliable information, etc.;
2) constant review and updating of brand security settings to prevent the display of hotel advertising alongside negative content, including Audience Network, Facebook and Instagram, etc.;
3) content filtering and inventory, which gives an additional level of control over confidential content in instant articles and blogs Facebook, Facebook In-stream, Instagram In-stream and Audience Network;
4) exclusion of topics for embedded videos on social media;
5) exclusion of content types in partner platforms: stop showing Facebook In-stream ads in live videos, as well as those published by non-partners, but monetized by the owners of intellectual property rights; creating block lists that prevent advertisements from appearing by certain publishers, Facebook In-Stream videos, instant Facebook articles, In-stream videos on Instagram and overlay Facebook ads on Reels, etc .; formation and selection of publisher permission lists: Audience Network, Instagram In-Stream and Facebook In-stream, in which hotel ads are displayed;
6) view and configure the lists of permitted content in the Brand Safety Controls interface to control information messages in terms of ensuring the authenticity and confidentiality of certain data;
7) view reports about the hotel information.

Approbation of the proposed measures is confirmed by the practical results of the research. Thus, with the help of the resource SimilarWeb – the official tool for measuring digital space, analytics was developed to evaluate the websites of the TOP-5 hotel brands and determine their place in the system of informal communications, including service distribution (Table 5).

Analysis of the sources of traffic on brand.com showed a high rating of consumer awareness of the websites of hotel brands, which ranges from 39.5 to 49.0%. The high level of consumer trust in the hotel product requires increased attention to the development and protection of this communication channel.

Undoubtedly, the COVID-19 pandemic has become an objective reality of the deteriorating situation in the hotel services market. However, most entities have used this time to innovate and deepen the digitalisation of commercial space. Digital technologies are implemented in the attributes of the hotel brand, the success of which depends, inter alia, on the quality of the system of protection of content, information and other values at different levels. The mentioned measures to ensure the digital security of the hotel brand are not exhaustive and are constantly updated in connection with the development of digital innovations: technologies, services and payment systems. Thus, digital security is formed from such components as people (brand carriers and stakeholders), technology (information, distribution, marketing) and business processes (communication, guest cycles, calculations, etc.), which in the cyber environment create innovative competence of the hotel brand – cyber resilience.

Table 5: Website analysis of the TOP-5 brands of international hotel operators

Site evaluation parameters	**The name of the website**				
	hilton.com	hyatt.com	ihg.com	hamptoninn.com	marriott.com
Rating in the category Travel and Tourism/ Accommodation and Hotels	8	14	9	n/d	4
Traffic view					
total visits, million	25.60	9.96	14.96	n/d	39.90
the average duration of page visits	00:05:17	00:05:37	00:03:55	n/d	00:05:06
the average number of web pages viewed per visit	5.11	4.49	4.28	n/d	4.54
refusal of further actions, %	35.26	42.81	42.63	n/d	43.70
Traffic sources for brand.com					
direct	41.77%	39.54%	49.06%	n/d	39.70%
referral	6.37%	9.91%	12.59%	n/d	10.72%
Metasearch	44.57%	46.38%	34.08%	n/d	39.28%
Social media	1.07%	1.07%	1.21%	n/d	2.09%
Email	3.64%	1.93%	1.84%	n/d	5.70%
media	2.59%	1.17%	1.21%	n/d	2.51%

Source: Compiled by authors based on Similarweb (2021)

4. Conclusions

The research showed the relevance of constant work on the hotel brand, which is exposed to risks, in particular in cyberspace. Therefore, the development of a scientific approach to digital brand security today is the basis for the formation of innovative tactics of management and development in today's economic environment, when every careless response or post on the Internet becomes the beginning of the end for a business.

The operationalization of the theoretical basis was carried out on the basis of approaches formulated in the scientific literature to the definition of the terms "brand" and "security". Thus, digital security is presented in the research as a set of measures to protect, safeguard, prevent and neutralize the threats to the subject from the likelihood of damage, harm to his interests and property while using cyberspace.

The meaningful characteristics of these definitions were formed, revealing the a priori probabilities of strengthening certain components of hotel brand security in general: people (brand carriers and relationship participants), technologies and business processes that shape communications, particularly in cyberspace. Based on these communications (formal and informal channels), proposals have been developed for managing the digital security of the hotel brand: risk prevention and insurance, reactive response to threats, monitoring and elimination of threats.

Since the brand as a result of the communicative process consciously creates a unique image of a quality and valuable product and forms a lasting emotional attachment to a consumer, in the digital space, security will be aimed at protecting and preserving these values.

The pandemic crisis has had a negative impact on the financial stability of hotels, leading to savings, including the use of cybersecurity consulting and outsourcing services and the retention of relevant staff. However, the greatest danger, including digital, is Russia's military invasion, which completely destroys urban infrastructure and tourist attractions - that is, Ukraine's tourism potential in general. Therefore, the proposed measures for brand security management are the optimal tactics for risk protection of the hotel business in today's conditions and promising for strategic foresight.

The process of collecting and processing the research material encountered problems and limitations related to the practical lack of fact-finding on the results of the impact of the coronavirus pandemic on hotel brands in Ukraine. In addition, the escalation of the war time frame does not yet allow an objective assessment of the impact of information wars, in particular cyber-attacks and cyber incidents on Ukrainian hotel brands and those that remained operating in the aggressor country. In addition, due to military stressors that create obstacles in direct communications with hotels, carry out tests of proposed cyber security measures. Further research is possible in the post-war period and will include the study of effective practices and examples of resistant strategies and tactics of Ukrainian hotel brands in countering cyber threats. It is also promising to study the impact of artificial intelligence on the cyber security of hotel brands and evaluate its role from a legal, economic, social and ethical point of view.

Conflict of interest

The authors declare no conflict of interest.

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Quantifying the financial impact of COVID-19 on the largest global companies in the hotel industry

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Abstract: COVID-19 has affected every business worldwide, with the hotel industry being among the hardest hit. The aim of this paper is to examine the impact of the pandemic on the liquidity and profitability of the world's five largest hotel companies. The research is conducted through financial ratio analysis and comparative analysis based on available financial data from 2017 to 2022, covering the period before, during and "after" (the recovery period) the crisis. Research results imply that hotels have prioritized liquidity over profitability during the pandemic, with some indicators pointing to its devastating effects that generated a long and difficult recovery. The paper's conclusions can be useful for the examined hotel companies to control their costs and produce positive financial outcomes in the future. They can also be helpful to policymakers as a respectable delivery system which will guarantee that the support eventually gets to the businesses that need it most.

Keywords: COVID-19, hotel industry, liquidity, profitability
JEL classification: G01, I15, Z33

Kvantifikacija finansijskog uticaja COVID-19 na najveće svetske kompanije u hotelskoj industriji

Sažetak: COVID-19 je uticao na svako poslovanje širom sveta, a hotelska industrija je među najteže pogođenima. Cilj ovog rada je da ispita uticaj pandemije na likvidnost i profitabilnost pet najvećih svetskih hotelskih kompanija. Istraživanje je sprovedeno kroz analizu finansijskih koeficijenata i uporednu analizu dostupnih finansijskih podataka od 2017. do 2022. godine, čime je pokriven period pre, tokom i „posle" (period oporavka) krize. Rezultati istraživanja ukazuju na to da su hoteli tokom pandemije davali prioritet likvidnosti u odnosu na profitabilnost, dok neki pokazatelji ukazuju na njene razorne efekte koji su generisali dug i težak oporavak. Zaključci rada mogu biti korisni obuhvaćenim hotelskim kompanijama u kontroli troškova i postizanju pozitivnih finansijskih rezultata u budućnosti. Oni takođe mogu biti od pomoći kreatorima politike kao respektabilan sistem za procenu ugroženosti privrednih subjekata koji će garantovati da podrška na kraju stigne do kompanija kojima je najpotrebnija.

Ključne reči: COVID-19, hotelijerstvo, likvidnost, profitabilnost
JEL klasifikacija: G01, I15, Z33

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1. Introduction

The COVID-19 pandemic has triggered the largest health and socio-economic crisis in recent history. According to Statista (2020), the world's biggest virus outbreaks in the last 50 years by confirmed cases and deaths include: H1N1 in 2009 (762,630,000 infections and 284,500 deaths); Ebola in 1976 (33,577 infections and 13,562 deaths); and COVID-19 in January 2020 (11,871 infections and 259 deaths). This implies that already in January 2020, COVID-19 has become the third most prevalent virus outbreak in terms of the number of infections in the last five decades. At the time of submission of this paper (mid-April 2023), there have been reported to be more than 762 million confirmed cases of the virus and more than 6.89 million COVID-19 deaths worldwide (World Health Organization, 2023). Such figures support the United Nations's (2020) claim that the COVID-19 pandemic is deeply etched in humanity's dark history, bringing about major disease and death, and upsetting normal daily life.

In addition to the undoubted human tragedy in terms of the health crisis, COVID-19 has had a significant impact on the global economy, international trade and human mobility. The breadth and depth of the impact differed from country to country, but all economies of the world were greatly affected by this crisis. According to Statista (2023), global GDP fell by 3.4% during 2020; global goods trade volume fell by 11.6% in April 2020; while on March 16 of the same year, the *Dow Jones* stock market posted its biggest single-day loss ever, losing nearly 3,000 points, breaking its previous record of 2,300 points established just four days earlier.

Despite the fact that COVID-19 had a negative influence on overall economic trends, the impact was far from uniform across all sectors and industries. Some sectors and industries suffered much more damage than others. As governments around the world implemented measures to contain the spread of the virus, such as travel restrictions and lockdowns, the travel and tourism industry was heavily affected. A number of recent studies examining the COVID-19 disaster confirm that the travel and tourism industry is suffering more than other businesses primarily due to the challenge of adhering to social distancing standards (Im et al., 2021; Pagano et al., 2020). As a result, the hospitality sector has experienced significant disruption, job losses and billions of dollars in lost revenue.

According to the World Tourism Organization (2020b), there was a 44% drop in international tourist arrivals (overnight visitors) in the first four months of 2020 compared to the same time in 2019. It resulted in a loss of 180 million international arrivals, which equates to $195 billion in lost foreign tourism revenue. This confirms that the pandemic has had a huge destructive impact on tourism worldwide, but there are still some differences if we look at regions separately. Asia and the Pacific, the first region to be affected by COVID-19, experienced a 51% drop in arrivals in the first four months of 2020; Europe come second with a 44% decrease in arrivals; followed by the Middle East (-40%); the Americas (-36%); and Africa (-35%) (World Tourism Organization, 2020b).

Because of the presented devastating effects on travel and tourism, COVID-19 has become a very challenging topic for researchers looking at its impact on various aspects of the hospitality industry. Bresciani et al. (2021) and Dolnicar and Zare (2020) shed light on the vulnerability of different types of accommodation – primarily hotels and full flats – during the pandemic. Đorđević et al. (2022) and Matteucci et al. (2021) assess how changes in the hospitality industry during COVID-19 have affected regional ecosystems and the quality of life of their resident populations. Aigbedo (2021) and Milovanović et al. (2021) investigated the impact of COVID-19 on hotel supply chain management. Hao et al. (2020) and Permatasari and Mahyuni (2022) discussed the hotel's post-crisis response and the necessity to improve future crisis management.

A large number of studies examined the financial impact of COVID-19 on the hospitality industry (Clark et al., 2021; Crespí-Cladera et al., 2021; Wieczorek-Kosmala, 2021). All of their findings imply that the COVID-19 accident will have a particularly negative impact on the hospitality industry, and emphasize that "financial strength of firms will be crucial for hospitality firms to survive the Covid-19 disaster" (Crespí-Cladera et al., 2021. p. 12). In addition to drastically reducing revenue, mandatory health and safety protocols implemented by hotels have generated significant costs, such as increased cleaning and sanitation measures, as well as the need to provide personal protective equipment for staff and guests.

The general intention of this research is to contribute to the literature on the crisis in the hospitality industry. The purpose of the paper is to explore the effects of COVID-19 on the financial performance of the hotel industry. Specifically, the authors analyze the impact of the COVID-19 pandemic on key financial indicators such as liquidity and profitability of the world's top five hotel companies prior to and following the pandemic. By doing so, this paper aims to provide valuable insights into the economic consequences of the COVID-19 pandemic on the hotel industry and to identify potential strategies for recovery and resilience in the face of future crises.

The rest of the paper is organized as shown below. The next section discusses the theoretical background and literature review of the impact of COVID-19's effects on the tourism and hospitality industry. The materials, methods and research questions of the paper are covered in the third part of the manuscript. In the following section, the authors present the research results and discuss them. Finally, the concluding remarks are presented in the last section.

2. Background

The COVID-19 outbreak had an overwhelming impact on tourism and affiliated sectors, which have been among the first and the most adversely hit since most of the governments have imposed travel and social distance restrictions (Higgins-Desbiolles, 2020; McLaughlin, 2020). The tourism and hospitality sector has born the most dramatic repercussions from the pandemic since it has experienced an immense shrink in the demand, being particularly sensitive to safety and health risks, thus recording a significant drop in activities and job losses which brought many small businesses to bankruptcy (Blake et al., 2003; Cartwright, 2000; Kozak et al., 2007; Maniga, 2020).

According to similar data from the World Tourism Organization (2020a) shown in the introduction of the paper (but viewed from a slightly different perspective), the tourism industry has witnessed 20 million decline in the number of tourists worldwide in the first quarter of 2020. The worst hit among the markets was Asia (-64%), followed by Europe (-60%), America (-46%), Africa (-44%) and the Middle East (-41%), which caused a sharp decline in travel spending (-42%), revenues (-$300-450 billion), and financial loss estimated at $1.9 trillion in the top 10 tourism markets. Consequently, hotel closures and layoffs have implied an 8.3 million staff reduction and thereby the decrease in customer service and satisfaction level that have broadened the ongoing scenario in which both, businesses and employees faced a significant loss in their income (World Tourism Organization, 2020a). In line with these facts, one may anticipate that the recent pandemic has raised many challenges for related companies' financial managers, struggling to identify opportunities and develop strategies that would improve the severely harmed outlook of their business finances towards revenue increase, liquidity enhancement and optimum asset utilization under the new circumstances.

The devastating effects of the recent pandemic on the tourism sector have been empirically confirmed by a number of studies. Foo et al. (2021), who have examined the impact of the pandemic in Malaysia, have identified a devastating effect in the observed market which suffered from a dramatic decrease in customer visits due to postponing travel decisions since the outbreak of COVID-19. In this view, Bouarar et al. (2020) pointed out that tourism industry revenues have been the most severely affected in the countries whose growth is strongly dependent on this sector. Accordingly, the authors identified a weak impact on the tourism sector in Algeria as this country records no significant revenues from this sector, while the damaging effect was the strongest for some Pacific Ocean and Asia countries such as China.

Since, as seen by Chen (2011), the stock prices have been a reflection of not only the firm's current and future anticipated cash flow, but also of their observed riskiness, there has been a number of studies aimed at assessing the impact of COVID-19 on the tourism business stock returns. Accordingly, as suggested by Jorda et al. (2020), COVID-19 has impacted negatively the asset returns in the tourism industry during and in the aftermath of the pandemic, which has been a common scenario associated with such events. Having an assessment of the impact of COVID-19 on stock returns by employing the OLS method, Liu et al. (2020) have revealed that significant decrease in returns has been recorded with the outburst of the COVID-19 pandemic, where the most severe impact has been observed in Asia stock market. Similarly, Al-Awadhi et al. (2020) have confirmed the strong negative impact of the COVID-19 pandemic on the returns of all the businesses in China.

With an intention to evaluate the strategies being imposed by the businesses in tourism sector after the COVID-19 outbreak and the introduction of restrictive measures, Ozatay and Sak (2020) have suggested that the businesses will not go for the decrease in the number of employees in their attempt to ensure the survival. Differently, the businesses shall consider other strategies to maintain the operations. To cope with such devastating effects of the pandemic, Liew (2022) suggests that the firms severely affected by the COVID-19 pandemic in the tourism sector shall be given the opportunity to reinforce their operations supported by government policies on tax reduction, employees' retention, postponing the loan payment and an easy access to additional finance stimuli.

Accordingly, aiming to reinforce the revenue side of the profitability function, the businesses shall place the emphasis on a better understanding of different customer segments, their incentives for traveling, travel behavior, perceived value and better quality communication with customers, rather than on discount strategy which turned not to be effective (Singh, 2020). In line with that, identifying the new and more effective business models and strategies that involve the adoption of technological innovations, reduction of risks and enhancing the customer perception of safety has become an imperative in the tourism sector (Shin & Kang, 2020). Following this view, while some hotels have created the plans towards boosting local and regional weekend travel, some others have adapted a part of their facilities into traveling workers' home offices providing long-term rental discounts, or into COVID-19 patient centers in peculiar cases. For many, enhancing flexibility in terms of free cancelation and flexible check-in and check-out policy was one of the paths towards reviving their operations and revenues. In response to social distancing measures and increased hygiene requirements, some hotels adopted innovations into various operational activities including contactless transactions and customer self-services and apps usage for food ordering and laundry services. Nevertheless, with the exception of well-known hotel chains, which despite significant decreases in their income could manage to sustain their operations throughout the pandemic period, many, being more vulnerable to the novel requirements, were imposed to close their facilities (Singh, 2020).

Summing all up, one may conclude that the COVID-19 pandemic has severely impacted the tourism and hospitality sector worldwide, putting on it strong challenges in identifying strategies to revive its operations and finances. Still, the crisis has opened new opportunities for business models innovations and restructuring, mostly focused on refining customer experience and new technologies implementation. Nevertheless, even though many steps have been taken so far by different stakeholders to support the recuperation of this sector, its revival will depend on many factors, among which are the attractiveness of the destination, dependency on air travel, health standards and sustainability awareness.

3. Materials and methods

The research aims to assess the impact of the COVID-19 pandemic on the hotel industry as one of the most affected and sensitive industries at that period of time. The economic and financial performance of the hotel industry has been analyzed based on the profitability and liquidity of the five world's biggest hotel companies. The time frame of the six-year period (2017-2022) covers the pre-COVID years, 2020 as a peak of the pandemics and the following "recovery" years. According to the World Bank (2023), the top five hotel companies, that have been chosen based on the value of turnover in 2022, are: Marriott International Inc. (20.8 billion), Hilton Worldwide Holdings Inc. (8.8 billion), Hyatt Hotels Corporation (5.9 billion), Host Hotels&Resorts Inc. (4.9 billion), and InterContinental Hotels Group (3.9 billion).

Facing a reduction in the number of holidays due to the outbreak of COVID-19, followed by an economic slowdown, requested isolation, many health recommendations, accompanied by transport and other challenges of the population, profitability and liquidity analysis of the selected hotel companies strive to elaborate their ability to maintain expenses in this challenging period, perform positive financial results, and meet their short term obligations (Weaver, 2021).

The economic and financial analysis of the hotel companies relies on financial statements (income statement and balance sheet) as the information base, available on their official websites. Comprehensive profitability and liquidity analysis are the methods applied in the research, as well as a comparative analysis.

Following the general direction of the research, the paper strives to answer the next research questions:

1. Has COVID-19 affected the hotel companies' capacity to respond to their current obligations and keep the necessary liquidity?
2. Have the hotel companies managed to maintain positive financial results independent of the crises caused by COVID-19?
3. Given the trade-off between liquidity and profitability, which one the companies give priority to in the time of crisis?

4. Results and discussion

The research results have been divided into two sections: liquidity and profitability.

Liquidity is one of the crucial segments to be considered in a company's finances and represents an indispensable part of financial statement analysis. Liquidity measures the company's capability to transfer its current assets into cash, with the aim to meet short term debts without using external sources (Cornett et al., 2012). The more liquid assets a company holds, the less likely is to experience financial risk. Liquidity ratios, the most commonly used and applied in this research, are the following:

– Current ratio; – Quick ratio (acid-test ratio); – Cash ratio; – Working capital.

Table 1 shows liquidity ratios for the selected hotel companies in the period from 2017 to 2022. According to the data presented, all the companies maintained very low liquidity in the observed period considering that current liabilities exceed current assets. These companies managed to increase the number of euros of current assets available to pay each euro of current liabilities (Madushanka & Jathurika, 2018) in 2020 as the pandemic year compared to the previous three years, as a sign of slightly higher liquidity.

The biggest rise in the *current ratio*, as the broadest liquidity measure, has been noticed for Hilton Worldwide Holdings, showing 2.4 times higher value in 2020 than in 2019. According to this ratio, the lowest liquidity in 2020 performs Marriott International, as well as in other years (except in 2018). Excluding inventories as generally the least liquid of a company's current assets since their book values are the least reliable measures of market value, *quick ratio (acid-test ratio)* measures a company's capability to pay off current obligations relying on more liquid assets (Cornett et al., 2012). However, these changes in liquidity measure do not affect the liquidity of the selected hotel companies to a large degree. Relying only on available cash and marketable securities to pay short-term obligations (Cornett et al., 2012), the *cash ratio* reports significantly lower liquidity of the hotel companies. For instance, Marriott hotel has available only 0.07 euro of cash and marketable securities in 2022 to pay each euro of current liabilities, compared to 0.45 euro of current assets available for the same purpose. Liquidity measured in this way decreases for around two-three times relative to current and quick ratios. Liquidity risk can be also measured by *working capital* which simply compares current assets and current liabilities. Marriott and Hilton, in all the analyzed years (2017-2022), struggled with a lack of current assets to meet short-term obligations. Hyatt and InterContinental have both positive and negative working capital in this period, while Hilton only in 2020 recorded a positive working capital and Host Hotels&Resorts only in 2022 recorded negative working capital. However, negative working capital also means that the companies tried to have more free cash flows than to tie up cash in operations.

Table 1: Liquidity ratios for the selected hotel companies, 2017-2022

Hotel companies	**Liquidity ratios**	**2022**	**2021**	**2020**	**2019**	**2018**	**2017**
Marriott	Current ratio	0.45	0.57	0.49	0.47	0.42	0.47
Hilton		0.85	0.95	1.73	0.73	0.76	0.82
Hyatt		0.68	0.92	2.60	1.57	1.27	1.34
Host		0.96	1.66	1.55	1.45	0.00	3.51
InterContinental		1.09	1.27	1.20	0.67	0.97	0.67
Marriott	Quick ratio	0.45	0.53	0.46	0.39	0.38	0.41
Hilton		0.85	0.88	1.69	0.70	0.69	0.75
Hyatt		0.68	0.92	2.60	1.56	1.25	1.32
Host		0.96	1.66	1.55	1.45	0.00	3.51
InterContinental		1.08	1.27	1.20	0.67	0.97	0.67
Marriott	Cash ratio	0.07	0.22	0.15	0.03	0.05	0.07
Hilton		0.36	0.47	1.32	0.19	0.15	0.27
Hyatt		0.35	0.53	1.91	0.88	0.65	0.74
Host		0.47	1.00	1.45	1.26	0.00	1.83
InterContinental		0.63	0.84	0.87	0.14	0.50	0.14
Marriott	Working capital (in mil)	-4,026	-2,781	-2,927	-3,550	-3,731	-3,067
Hilton		-502	-148	1,771	-778	-632	-455
Hyatt		-1,037	-170	1,579	620	284	335
Host		-59	531	887	560	1,813	1,253
InterContinental		134	442	376	-452	-31	-313

Source: Authors' calculations

Liquidity ratio analysis of the selected top five world hotel companies shows their low level of liquidity in the period from 2017 to 2022. Given the research goal to determine the impact of the pandemic in 2020 on their liquidity, all the companies tried to keep a little more liquid assets in 2020 compared to previous years, but then again slightly lower liquid assets in the following years. The current and quick ratio above 1, indicating a company's ability to meet its current obligations, has not been recorded for Marriott at all, for Hilton only in 2020, and for the other three companies in three or four of the analyzed years. Likewise, working capital leads to the same conclusion. Namely, Marriott has a negative working capital in the whole period, Hilton has a positive working capital only in 2020, Host Hotels&Resorts recorded lower current assets than current liabilities only in 2022, while Hyatt and InterContinental have both positive and negative working capital in the observed period. However, a low level of liquidity may actually show good or decisive company management considering the trade-off between the advantages of being liquid versus the disadvantages of reduced profit.

Profitability shows a company's ability to generate income from its operations (Andekina & Rakhmetova, 2013) relative to sales, equity, assets, operational costs, etc. Profitability ratios evaluate the company's capacity to utilize its assets with the aim to make profit and increase shareholder value (Mitrović et al., 2021). The most often used ratios for measuring the company's profitability, being applied in this research, are the following:

- Gross profit margin;
- Operating profit margin;
- Net profit margin;
- Basic earnings power ratio;
- Return on assets;
- Return on equity;
- Return on debt;
- Debt to equity ratio.

Profitability ratios, as the most commonly used financial metrics, in the research of the five hotel companies have been divided into margin and return ratios (see Table 2). *Gross* and *operating profit margins*, which provide an inside into the company's earning power and ability to manage its costs of production, achieve their lowest values in 2020 as the pandemic year. *Net profit margin*, as well known as the profit margin ratio, shows the percentage of revenue left after all the company's costs are paid (Cornett et al., 2012). Based on the *net profit margin* results from Table 2, all five hotel companies had negative results in 2020 after previous years' positive results, pointing out a lack of sales to cover all expenses. Marriott, Hilton and InterContinental recovered in the next 2021 with positive values, while Hyatt and Host Hotels&Resorts needed two years to recover from the crises caused by COVID-19 and related challenges. Operating profit generated per euro of a company's assets, measured through the *basic earning power ratio*, was positive in all analyzed years only for Marriott and InterContinental hotels, while Hyatt and Host Hotels&Resorts have negative value in 2020 and 2021, and Hilton in 2020. All five hotel companies recorded the lowest *basic earning power ratio* in 2020, as an obvious impact of COVID-19. Similar results can be noticed in the return ratios (*return on assets*, *return on equity* and *return on debt*) given the lowest values in 2020, except for Hilton and InterContinetal regarding the lowest *return on equity* value in 2019 and 2017. The last profitability ratio, *debt to equity ratio*, shows Marriott's extreme reliance on debt relative to its own resources. This ratio increased from 5.63 (times debt higher than equity) in 2017 to 56.44 (times debt higher than equity) in 2020. While Hyatt has its debt twice higher than equity, Host Hotels&Resorts keep reliance through the years on its resources rather than on debt. On the other hand, Hilton and

InterContinental, with their negative debt to equity ratio, face a financial risk since their liabilities exceed their assets.

Table 2: Profitability ratios for the selected hotel companies, 2017-2022

Hotel companies	Profitability ratios	2022	2021	2020	2019	2018	2017
Marriott	Gross profit margin	21.94	20.21	13.80	15.34	17.70	17.52
Hilton		30.75	28.59	13.54	25.76	25.28	24.14
Hyatt		21.86	14.04	-0.05	18.78	21.98	22.08
Host		59.65	55.02	32.47	56.88	51.00	51.00
InterContinental		28.01	30.72	22.39	26.89	22.69	25.70
Marriott	Operating profit margin	16.72	12.69	3.32	9.24	12.14	12.09
Hilton		23.87	17.57	-2.76	16.67	16.08	15.45
Hyatt		6.76	-8.29	-30.59	3.92	7.45	7.51
Host		15.45	-8.93	-58.83	14.52	9.47	12.27
InterContinental		17.65	17.41	7.31	16.51	13.61	15.42
Marriott	Net profit margin	11.35	7.93	-2.53	6.07	9.19	7.13
Hilton		14.31	7.08	-16.60	9.32	8.58	13.33
Hyatt		7.72	-7.33	-34.03	15.26	17.27	8.72
Host		12.90	-0.38	-45.19	16.82	19.68	10.47
InterContinental		9.64	9.15	-10.86	8.32	8.05	13.24
Marriott	Basic earnings power ratio	14.00	6.88	1.42	7.74	10.64	10.37
Hilton		23.87	17.57	-2.76	16.67	16.08	15.45
Hyatt		3.23	-1.99	-6.92	2.34	4.34	4.42
Host		6.18	-2.09	-7.39	6.45	4.33	5.65
InterContinental		16.30	10.73	3.47	19.22	13.78	21.92
Marriott	Return on assets	9.50	4.30	-1.08	5.08	8.05	6.12
Hilton		8.09	2.66	-4.27	5.89	5.46	7.62
Hyatt		3.70	-1.76	-7.70	9.10	10.06	5.14
Host		5.16	-0.09	-5.68	7.48	8.99	4.82
InterContinental		8.89	5.64	-5.16	9.68	8.15	18.83
Marriott	Return on equity	415.14	77.72	-62.09	181.08	85.71	40.73
Hilton		-114.30	-50.06	48.12	-186.65	136.92	64.10
Hyatt		12.29	-6.23	-21.87	19.31	20.91	10.14
Host		9.20	-0.17	-11.38	12.32	14.50	8.09
InterContinental		-23.32	-18.05	14.06	-26.28	-29.31	-43.33
Marriott	Return on debt	9.72	4.55	-1.10	5.23	8.88	7.24
Hilton		7.56	2.52	-3.92	5.71	5.69	8.65
Hyatt		5.28	-2.46	-11.89	17.21	19.39	10.46
Host		11.74	-0.19	-11.34	19.02	28.33	14.24
InterContinental		6.44	4.30	-3.77	7.08	6.39	13.15
Marriott	Debt to equity ratio	42.69	17.07	56.44	34.63	9.65	5.63
Hilton		-15.13	-19.85	-12.28	-32.69	24.08	7.41
Hyatt		2.33	2.53	1.84	1.12	1.08	0.97
Host		0.78	0.88	1.00	0.65	0.51	0.57
InterContinental		-3.62	-4.20	-3.73	-3.71	-4.59	-3.30

Source: Authors' calculations

The conducted six-year profitability and liquidity analysis, with its focus on 2020 as the pandemic year, have provided an insight into the ability of the analyzed top world five hotel companies to meet their short-term obligations and be profitable. Given the trade-off between the companies' intention to keep liquid assets and make profit at the same time, the research confirmed that all five hotel companies in 2020 slightly increased their liquidity while they could not manage to keep positive financial results. The main reason for low profitability in this year is reflected in double lower revenue for all evaluated hotel companies so they failed to cover expenses. Although the hotel companies have recovered from COVID-19 in financial terms, their revenue in 2022 still did not reach the value of revenue from the pre-COVID year (2019).

5. Conclusion

With the COVID-19 pandemic, market survival has become a need for businesses in practically all industries and sectors of the global economy. A company cannot remain in operation without the ability to sustain liquidity and profitability, which is why the paper has put these indicators at the forefront of its consideration. These significant performance metrics assess the sustainability and growth potential of each company.

Our analysis highlights the importance of hospitality firms' financial stability in surviving the COVID-19 crisis. The results of this study and other publications discussed in the paper show that the COVID-19 pandemic has had a profound financial impact on the hospitality industry, with hotels being particularly hard hit. With travel restrictions, lockdowns and social distancing measures in place, hotels have seen a sharp decline in demand for their services, and thus a significant decline in revenue.

The research results of this paper showed a relatively low level of liquidity of all considered hotel companies in the period from 2017 to 2022. This means that current liabilities exceed the hotel's current assets in most of the six observed years. It is also indicative that hotels in 2020 (the year with the highest peak of the pandemic's impact) managed to increase their liquid assets compared to previous years. For example, when it comes to the *current ratio* and the *quick ratio*, as the most widely accepted indicators of liquidity, all hotels increased value in 2020 compared to 2019, with some of them doubling (Hilton) or nearly doubling (Hyatt and InterContinental) their score. The results of the research also indicate that after 2020, the liquidity of the majority of observed hotels declined again. The low level of liquidity can be attributed to the good and decisive management of the companies, considering the trade-off between the advantages of liquidity in relation to the disadvantages of reduced profits.

The analysis applied in this paper showed a significantly different situation when it comes to profitability during the COVID-19 crisis. All observed hotels recorded very low levels of almost all profitability measures throughout the pandemic, with most of them being negative. The indicators of *gross profit margin*, *operating profit margin*, *net profit margin*, *basic earnings power ratio* and *return on assets* showed convincingly the lowest values in 2020 compared to other observed years for all analyzed hotel companies. A devastating financial metric is particularly visible in the *net profit margin*, which indicates the percentage of revenue that remains after all expenditures have been covered by the business. According to this indicator, all five hotels recorded negative results in 2020 after positive achievements in previous years, pointing out a lack of sales to cover all expenses. While Hyatt and Host Hotels&Resorts needed two years to recover from the COVID-19 crisis, Marriott, Hilton and InterContinental rebounded in the following year of 2021 with positive values.

Summarizing the results of the study, it can be concluded that the observed hotel companies prioritize liquid assets (liquidity) over profit margins (profitability) during the COVID-19 pandemic. It seems that the hotels were forced to make this decision, as their revenues dropped significantly during the crisis and they were struggling to survive with limited occupancy and reduced income. As the main reason for the low profitability, we have identified a double lower income for all rated hotels in 2020 compared to the previous year. When we consider that they were also exposed to the additional costs of implementing health and safety protocols, such as increased cleaning and sanitation measures and the purchase of personal protective equipment for staff and guests, it is clear that there was little chance of an impact on profitability. The extent of the COVID-19 influence on the profitability of the observed hotels is also shown by the fact that even in 2022 they did not manage to reach the income they achieved in the period before the pandemic.

The study is limited to a group of five leading global hotel companies, while there are no representatives of small and medium-sized hotels in the sample. Although it is logical and justified to expect that the COVID-19 pandemic had a stronger impact on smaller participants in the hotel industry, in a paper of this scope and structure it was impossible to process a heterogeneous set of hotels in a consistent and comprehensible way. Studies that would fill this gap in terms of the inclusion of smaller representatives in the hotel business are desirable and strongly suggested by the authors of this paper.

Conflict of interest

The authors declare no conflict of interest.

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Review Article

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Key cultural-historical determinants of tourism improvements of the Municipality of Bač

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Abstract: The Municipality of Bač is a true treasure trove of authentic tourist attractions due to its turbulent centuries-old past with preserved heritage. That is why the topic of this paper is the cultural and historical factors important for tourism development in the Municipality of Bač. The paper aims to point out the current situation, but it also wants to identify the development potentials of the Municipality of Bač. The process of valuing the heritage of the Bač Fortress, the Bodjani Monastery, the Franciscan Monastery, and the Turkish Bath is based on scientific, cultural, educational, and touristic values. For the purposes of work from August 23 to September 30, 2022, a survey was conducted on a sample of 115 respondents from Bač – the seat of the municipality of the same name, as well as in other settlements of this municipality. The total cultural and touristic value of the authentic heritage exceeds the other average values at the location, while the scientific value is the lowest compared to all the other. Due to the devastation of the Turkish bath, the overall educational function is not satisfactory.

Keywords: Bač, cultural heritage, sustainable tourism, valorization
JEL classification: L83, Z32

Ključne kulturno-istorijske determinante unapređenja turizma opštine Bač

Sažetak: Zbog burne viševekovne prošlosti sa očuvanim svedočanstvima trajanja, opština Bač predstavlja pravu riznicu autentičnih turističkih atrakcija. Predmet ovog rada su kulturno-istorijske determinante koje su važne za unapređenje turizma na području opštine Bač. Cilj rada je da se ukaže na trenutno stanje, ali i da se prepoznaju razvojni potencijali opštine Bač. Proces vrednovanja nasleđa Bačke tvrđave, Srpskog pravoslavnog manastira Bođani, Franjevačkog samostana i Turskog hamama zasnovan je na naučnim, kulturnim, edukativnim i turističkim vrednostima. Za potrebe rada od 23. avgusta do 30. septembra 2022. godine, na uzorku od 115 ispitanika, obavljeno je anketno istraživanje u Baču – sedištu istoimene opštine, kao i u ostalim naseljima ove opštine. Ukupna kulturna i turistička vrednost autentičnog nasleđa premašuje ostale prosečne vrednosti na lokaciji, dok je naučna

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vrednost najniža u odnosu na sve ostale. Zbog devastacije Turskog hamama, ukupna obrazovna funkcija nije zadovoljavajuća.

Ključne reči: Bač, kulturno nasleđe, održivi turizam, valorizacija
JEL klasifikacija: L83, Z32

1. Introduction

Cultural heritage is highly positioned at the global, national, and local levels and being an indispensable segment of sustainable development policies, it is a relevant source of identity. Therefore, any consideration of cultural heritage and its integration into the spectrum of public policies should be based on the protection, use and presentation of cultural monuments, spatial cultural and historical sites, archaeological sites, and landmarks.

Due to the global development of tourism, especially mass cultural tourism, there are more and more attitudes that the concept of cultural heritage development must be based on the results of analysis and environmental impact, strategic planning, and appropriate heritage management strategies. Such a starting point is based on the principles of the Helsinki Declaration on the Political Dimension of Preserving Cultural Heritage in Europe (Council of Europe, 1996), which was significantly upgraded with the adoption of the Council of Europe Framework Convention on the Value of Cultural Heritage for Society (Council of Europe, 2005).

The UNESCO World Heritage List One has been enriched with 1.144 properties, 897 of which are cultural assets, 218 are natural assets, while 39 are mixed (UNESCO, 2021a). There are five cultural properties from Serbia on the World Heritage List (UNESCO, 2016): Stari Ras and Sopoćani Monastery (year of inscription: 1979), Studenica Monastery (1986), Medieval monuments in Kosovo and Metohija: Visoki Dečani Monastery (2004) and the Church of the Patriarchate of Peja, Gračanica Monastery and the Church of the Mother of God Ljeviska (expanded inscription 2006), Gamzigrad - Romuliana (2007) and Medieval tombstones Stećci (2016).

The UNESCO List of Intangible Cultural Heritage of Mankind includes 629 elements from 139 countries (UNESCO, 2021b). The representative list from Serbia includes: Family Patron Saint’s Day (2014), Kolo, traditional folk dance (2017), Singing with the fiddle (2018), Zlakusa pottery, handmade pottery (2020) and Social practices and knowledge related to the preparation and use of the traditional plum spirit – šljivovica (2022) (UNESCO, 2022).

“The cultural landscape of Bač and its surroundings” is on the UNESCO Tentative Lists, published by the World Heritage Committee. This is an important and obligatory step considering that nominations for inscription on the UNESCO World Heritage List are considered only if the information on heritage is publicly available on the provisional list for no less than a year.

In addition to indicating the current situation, the research should contribute to the recognition of the development potential of both the Municipality of Bač and the wider region, respecting the Law on Tourism, the Tourism Development Strategy of the Republic of Serbia for the period from 2016 to 2025, as well as the Development Plan of AP Vojvodina 2022-2030.

2. The importance of cultural heritage for tourism development

Cultural-historical heritage and sustainable tourism development are complementary and dynamic categories whose synergistic effects significantly exceed individual reflections. In this context, Slunjski (2017) emphasizes the contribution of cultural heritage to the attractiveness of a tourist destination, while tourism is seen as a necessity due to the promotion of the tourist destination and building its identity through the goods of tangible and intangible cultural heritage, which ultimately provides funds for its preservation. Cai et al. (2021) created a new model of joint development of cultural heritage and tourist activity that represents a relevant segment of sustainable development tourism, directing the focus towards the use of digital technologies, which will enable managers to regulate the tourist flow according to the tourist capacity threshold. Krasojević and Djordjević (2017) point out that tourists are increasingly interested in different cultures, performing arts, crafts, rituals, gastronomy, interpretation of nature and the universe, which is increasingly reflected in financial performance. It is estimated that these tourists spend a third more than the average, which indicates that the growing trend of interest in cultural tourism provides an opportunity for cultural heritage, as a resource of development, to benefit the local and broader community by becoming sustainable. In this sense, Wang et al. (2022) emphasize that the preservation of cultural heritage has a key cultural, educational, political and artistic role, and that it contributes to the social development and cultural preservation of the destination area.

The increase in the number of new cultural destinations and ways of traveling will contribute to the rise of creative clusters and event programs, such as the European Capital of Culture. The focus of such large programs is gradually shifting to smaller cities. [...] The Internet and social media have enabled individuals to create their own cultural experiences, establishing a dialogue between cultural producers and consumers towards cultural development (Richards, 2021, pp. 4–5). Milićević et al. (2013) warn that the development of mass tourism has contributed to the uncontrolled exploitation of natural resources, but that the solution to the irresponsible behavior of providers of tourism offers is found in the concept of sustainable tourism, i.e. in the establishment of responsible and planned use of potential. Many authors point to the consequences of insufficiently good management of cultural heritage and possible degradation (Semprebon, 2022; Zhang et. al., 2015; Zubiaga et al., 2019), warning of the irreversibility of the process of cultural heritage degradation.

Sančanin (2019) points out that the integration of cultural and historical heritage is an important qualitative shift, "which contributes to enriching the tourist offer by engaging emotions, improving experiences, and deepening an understanding of places, people, events and objects from the past and present" (p. 7). Dašić and Savić (2020) remind that highlighting the identity of the destination and integrating natural and cultural heritage into the tourist product is of crucial importance for the sustainability of the tourist product on the market, while Taylor (2019) proposes a broader approach to this topic, explaining that the concept of cultural landscape, which covers rural and urban spheres, became the main topic in the process of managing cultural heritage sites, and that the roots of this mutual connection are found in the social, political and economic relations between people and the landscape.

Numerous and diverse media content can contribute to the development of the awareness of cultural property importance among the local population. In addition, "a revival of historical events, all possibilities for involving the population in the care of cultural heritage and additional education, should be utilized" (Janković Perić, 2019, pp. 378–379).

The development of tourism based on cultural and historical heritage needs to be viewed through the prism of the funds secured in this manner, which can be directed to the protection and further promotion of heritage. There is also a part of the professional public that is reserved and looks at cultural tourism with a dose of caution, warning of the numerous negative consequences of tourism on culture. However, potential conflict situations can be resolved, over the long term or even permanently, by creating a predictable scenario for increased tourist influx and a stable environment. There is a number of examples in which increased attendance may be considered beneficial to stakeholders, "museums, heritage theme parks, and even religious cultural assets, that count on ticket revenues or donations and which can reap the benefits of increased visits without incurring any negative consequences" (McKercher, 2005, p. 541). The claim that investing in cultural tourism can significantly improve the quality of life in locations where there is cultural and historical heritage, as well as contribute to the renewal of neglected urban areas and increase the value of real estate, also supports this. In addition, this type of tourism encourages the sustainable development of traditional forms of life and economic activities, contributes to employment, and returns life to depopulated zones (Urošević, 2010).

Pančić Kombol (2006) assures that tourism is creating specific areas of demand that are constantly evolving given that tourists seek authenticity and cultural meaning, explaining "that it has gone beyond a framework that has long belonged to the social elite and that culture scores high on the scale of popular activities during tourist trips" (p. 213).

Recognizing the potential and valuing cultural heritage at the municipal and city level can be a stable platform for its integration into other local development strategies and projects. For local governments, as well as for all other stakeholders in cultural heritage, it is important to create strategic documents for the management and use of cultural heritage in a way that allows (Mikić, 2015):

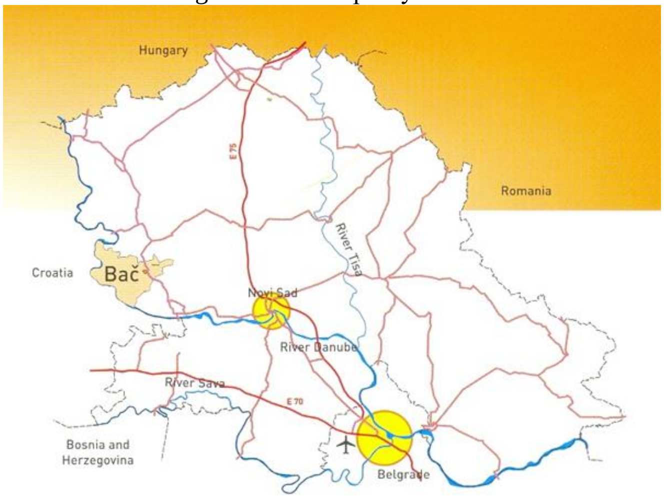
- "Identification of buildings/units with heritage values and their status;
- Valuation of cultural heritage;
- Integration of cultural heritage into development policies and other strategic documents at the local level;
- Insight into measures and protection and use regime;
- Insight into legal status and ownership;
- Analysis of the rehabilitation potential of cultural heritage and its broader involvement in development processes;
- Financial framework and potential investment strategy for the rehabilitation of cultural heritage;
- Institutional framework for implementation, jurisdiction and responsibility" (p. 14).

The necessity of stepping out of the multidisciplinary approach to tourism development and to the interdisciplinary platform extends to establishing a correlation between the most important resource attractions and multipliers. Such an approach should provide an "integrated definition and the implementation of goals for the development of culture and tourism through intersectoral and interdepartmental connections and continuous cooperation" (Sančanin et al., 2019, p. 77).

3. The cultural and tourist values of Bač

The settlement of Bač occupies a specific position as a border municipality on the Danube with a natural and state border between Serbia and Croatia. Its center is the municipality of the same name in the South Bačka District, 140 *km* from Belgrade, 120 *km* from Subotica and 62 *km* from Novi Sad (Figure 1). According to the 2011 census, there were 14,425 inhabitants in the municipality of Bač (Statistical Office of the Republic of Serbia, 2011), but in assessing the biodynamic characteristics of the population, a depopulation trend has been predicted, thus 11,741 inhabitants are expected to be living in Bač by the year of 2041 (Statistical Office of the Republic of Serbia, 2014).

Figure 1: Municipality of Bač



Source: Municipality of Bač (n.d.)

A valuable cultural and historical heritage is noticeable within the municipality of Bač, whose valorization provides a chance for the development of tourism. The Bač Fortress is of special cultural heritage significance, while the Bodjani Monastery and the Franciscan Monastery are recognizable among the sacral heritage. The site also contains the remains of a Turkish bath, Hamam.

The utilization of both a multidisciplinary approach and a detailed analysis of the situation and the proposed spatial planning in cooperation with relevant national and international institutions allow one to be optimistic when it comes to the desired result: “creating an ambiental whole around the cultural-historical asset, with basic and accompanying tourist content that would enable controlled commercial use, revenue generation and partial return of income through investments in conservation” (Kovjanić, 2003, p. 31).

Radovanović (2018) reminds that the long history and almost uninterrupted cult function of one place, for more than eight centuries, together with preserved testimonials, represents not only a rich treasure, but also a rarity due to the amount of recorded, preserved and living heritage.

Creating the concept of sustainable year-round tourism development should be based on the construction of tourist infrastructure, a wider range of tourist products and more diverse tourist services, as well as stronger IT support.

3.1. The Bač Fortress

The Bač Fortress[1] is an important site and the best preserved medieval fortification complex in Vojvodina, adapted for defense in wetlands with a fortified castle and 36 gardens. “As an

[1] Bač Fortress: immovable cultural property of exceptional importance. Decision No. 1175. Belgrade, July 30, 1948.

important archeological site, it testifies to the settlement that existed there in the younger Neolithic period, six millennia ago" (Spatial Plan of the Municipality of Bač 2015, p. 58). It is assumed that the fortification, or at least one part of it, was built during the period from 1338 to 1342 and is related to the Hungarian King Charles Robert of Anjou. Although the Fortress was rebuilt and strengthened as the largest fortress in Bačka at the end of the 15th and the beginning of the 16th century, Bač and the Fortress were occupied by the Turks in 1529, who remained there until 1687 (SANU, n.d.). After the Rákoczi Uprising in 1704, the Fortress was mined and destroyed never to be rebuilt or used again. Although the physical integrity has been significantly lost, the preserved elements of the Fortress point to the developed High Gothic fortification school, with details of the early Italian Renaissance (Vujović, 2018).

3.2. The Bođani Monastery

The Orthodox monastery Bođani[2] is 14 *km* west of Bač in the direction of the Danube. The complex consists of a church, dormitories built in the shape of the letter P and ancillary economic facilities. Vujović (2016) states that "the construction of the original Monastery began at the end of 1478, while the existing church, dedicated to the Presentation of the Most Holy Mother of God, was built in 1722, definitely assuming its current appearance after the fire in 1786-1810" (p. 21). "The interior of the church is covered with wall paintings by graphic artist and icon painter, Hristofor Žefarović" (Balaban 2018, p. 11). In the church, there is an icon of the miraculous Mother of God of Bođanska from the end of the 17th century. The iconostasis is a valuable artistic whole, the work of Kiev painters Jova Vasilijevic and Vasilije Romanovic (Vujović, 2018).

3.3. The Franciscan Monastery

The Franciscan monastery[3] is located in the center of Bač and is one of the most important cultural assets in the Republic of Serbia. The complex dates back to the 12th century, and "consists of a church dedicated to the Assumption of the Blessed Virgin Mary and lodgings that are connected to the church by a corridor and comprise a single whole" (Balaban 2018, p. 4). The icon of the Mother of God from 1684 and old rare books were placed under protection in 1948 while in 1951 the protection was extended to architecture. After the fall of Bač to Turkish rule, the church was turned into a mosque (Vujović, 2018). With the introduction of museum-educational contents in 2018, the tourist offer has been significantly enhanced.

3.4. The Turkish Hamam

The remains of the Turkish bath – Hamam[4] are located near the entrance to the Bač Fortress and "represent a valuable and rare testimony to 157 years of Ottoman domination in the area of Bačka" (Vujović 2016, p. 28). The single bathroom, built in the 16th century and auxiliary functional rooms, was a gathering place for the local population. Part of the Hamam was destroyed, "but pipes within the walls are visible, which conducted hot and cold water, and numerous data on its original appearance have been preserved" (Balaban 2018, p. 7).

[2] Bođani Monastery (monastery church, frescoes, and iconostasis): cultural monument of exceptional significance. Decision No. 2152. Belgrade, December 04, 1948.

[3] Franciscan Monastery: cultural monument of exceptional significance. Decision No. 679. Novi Sad, May 30, 1951.

[4] Remains of a Turkish bath – Hamam: cultural monument of great importance. Decision No. 01-747/2. Novi Sad, November 01, 1971.

4. Objective and research methodology

The aim of the research is to analyze and present the scientific, cultural, educational and touristic value of the cultural and historical heritage of the municipality of Bač through the established criteria, which can be put in the function of tourist valorization.
Accordingly, primary research was created and the following research questions were posed:

Q_1: How and to what extent does cultural heritage represent scientific value?
Q_2: How and to what extent does cultural heritage have educational value?
Q_3: How and to what extent does cultural heritage have touristic value?

The data were collected via a direct survey method. The research sample was purposive sampling of residents of the municipality of Bač (Vojvodina, Republic of Serbia). The pilot survey included 25 respondents, while the final number of respondents was 115 (n=115). The time of data collection was August 23 to September 30, 2022.

The questionnaire consisted of five parts. Namely, the first part contained general questions about gender, level of education, place of residence, region. In the second and third part, there were questions/items related to the determination of the scientific value of cultural heritage, where respondents evaluated the scientific value of cultural heritage and the cultural value of cultural heritage on a scale 0-3, where 0 implied significant damage to essential features, and 3 implied no visible damage, *i.e.*, 0 - no relation to cultural events, 3 - often a part of cultural events. In the fourth part of the scale, the respondents evaluated the educational value of cultural heritage on a scale 0-3, i.e. 0 - it is not used for educational purposes, 3 - it is used for educational purposes at different levels of education. In the fifth part, the respondents randomly evaluated items related to the touristic value of cultural heritage in such a way that 0 meant there are no services, and 3 services are next to the object of cultural heritage. The data were processed in the MS Excel software package.

Valuation of cultural heritage respects numerous characteristics and criteria such as preservation, uniqueness, the context of a specific period of time, spirituality, aesthetic value, connection with significant events and personalities from the past, sensitivity to dynamic and often unpredictable changes, and the increasing pressure of the modern way and pace of life. As, to date, universal determinants for the valorization of tangible and intangible cultural heritage have not been established, nor is the value of cultural heritage constant, defining criteria is the task of individual countries and researchers. The following criteria were used in this research (Dumbović-Bilušić, 2015; Mesarić, 2015; Slunjski, 2017):

- In order to determine the scientific value of cultural and historical heritage, the following criteria are evaluated:
- State of preservation (3)[5], rarity in the research field (2), public scientific papers on cultural and historical heritage (3), connection with other cultural assets (2) and importance for the reconstruction of the evolution of space (3).
- When valuing cultural values, the role in cultural events (3), presence in works of art, myths and legends (3), connection with people and events of historical significance (3), religious and metaphysical significance (2) and potential cultural value, are taken into account.
- Educational value is assessed with only one criterion: use of cultural heritage for educational purposes (3).
- Determinants that are evaluated when establishing touristic value are: accessibility and access (3), recognition outside the profession (3), representation in tourist materials (3),

[5] The maximum number of points has been given in parentheses.

equipment and existence of services (3), duration of the season of possible use (3) and risk of degradation (2).

The sum of the obtained points provides a clear presentation and easy interpretation of the value of cultural and historical heritage, which is the basis of objective valorization and correlation with other heritage.

5. Research results

The research results are based on the survey "Key cultural-historical determinants of tourism improvements of the municipality of Bač". One hundred and fifteen respondents participated in the research, 32 of which (27.83%) were Male and 83 (72.17%) were Female. The average age of the respondents was 53 years of age, where the minimum age was 18, and the maximum age was 76. For more on the socio-demographic characteristics of the respondents, see Table 1.

Table 1: Summary of the demographics

				Frequency	**Percent**
Gender	Male			32	27.83
	Female			83	72.17
	Total			115	100.00
Year of life	Youth (up to 19 years)			9	7.83
	Mature (from 20 to 59 years)			80	69.56
	Older (60 and older)			26	22.61
	Total			115	100.00
Populated places	Bač			60	52.17
	Selenča			15	13.04
	Vajska			15	13.04
	Bođani			6	5.22
	Plavna			10	8.70
	Bačko Novo Selo			9	7.83
	Total			115	100.00
Education	Elementary school			0	0.00
	Secondary school			49	42.61
	Bachelor academic or vocational studies			42	36.52
	Master studies			23	20.00
	PhD studies			1	0.87
	Total			115	100.00
Region of residence	Region of Vojvodina			57	49.56
	Belgrade region			31	26.96
	Region of southern and eastern Serbia			5	4.35
	Region of Šumadija and western Serbia			14	12.17
	Kosovo and Metohija			2	1.74
	Foreign countries			6	5.22
	Total			115	100.00

Source: Authors' research

During the research period, the majority of tourists to be found in the area of the municipality of Bač were middle-aged, which can help in forming the tourism offer of the mentioned statistical cohort. The majority of tourists to frequent this destination came from AP Vojvodina and Belgrade Region, so it is necessary to reserve significantly more promotional activities for other Serbian regions, as well as to attract and retain tourists from abroad. In addition, there is a noticeable lack of content that could attract the younger generation, and finding answers to these questions is at the top of the development priorities of the municipality of Bač.

Table 2: Determining the scientific value of cultural heritage

CRITERIA	**ASSIGNED NUMBER OF POINTS**				**SCALE**
	I	II	III	IV	
Preservation status	0			0	**0** - significant damage to essential features
					1 - moderate damage to essential features
					2 - mild damage without loss of essentials designations
		3	3		**3** - without visible damage
Rarity in the field of research					**0** - common site in the research field
		1	1	1	**1** - among the three most important sites in the research field
	2				**2** - only site in the research field
Scientific papers on cultural goods					**0** - does not exist
				1	**1** - rare papers
		2	2		**2** - number of papers of national importance
	3				**3** - papers of international importance
Connection with other cultural goods					**0** - no connection
					1 - connection with only one cultural good
	2	2	2	2	**2** - connection with multiple cultural goods
Importance for the reconstruction of the evolution of space					**0 -** without significance
					1 - small significance (indicates evolution of the surroundings)
				2	**2** - medium significance (indicates evolution of the broader surroundings)
	3	3	3		**3** - great significance (indicates evolution of the region)

Note: The Bač Fortress [I]; The Bođani Monastery [II]; The Franciscan Monastery [III]; The Turkish Hamam [IV]
Source: Authors' research

The process of determining the scientific value of the cultural heritage for the Bač Fortress and the Turkish Hammam showed the examinees' concern for the state of preservation and possible degradation, and the scientific value was the lowest in relation to all other criteria. The situation at the location and the arguments that warn of the necessity of conducting extensive and interventional scientific-research activities, have led to a lack of points for the cultural assets of the Bač Fortress and the Turkish Hammam. The Bođani Monastery and the Franciscan Monastery, recognized as a preserved and largely researched heritage, were valued according to this criterion with the maximum number of points. Cultural goods have a satisfactory interconnectedness, as well as exceptional importance for the reconstruction of the evolution of space. The average assessment of scientific value for the Bač Fortress is 2, the Bođani Monastery and Franciscan Monastery 2.2, and the Turkish Hammam 1.2. The total scientific value of cultural heritage is 7.6.

Creating a database of scientific and professional papers on the cultural and historical heritage and tourisic potentials of Bač, is one of the priority common tasks of public policy makers at the local and national level.

Table 3: Determining the cultural value of cultural heritage

CRITERIA	**ASSIGNED NUMBER OF POINTS**				**SCALE**
	I	II	III	IV	
Role in cultural events					**0** - nothing to do with cultural events
				1	**1** - rarely part of cultural events
	3	3	3		**3** - often part of cultural events
Presence in works of art, myths and legends				0	**0** - not present
		1	1		**1** - rarely present
	2				**2** - often present
Connection with people and events of historical significance					**0** - no connection
				1	**1** - weak connection
	3	3	3		**3** - frequent connection
Religious and metaphysical meaning					**0** - no religious or metaphysical meaning
					1 - weakly expressed religious or metaphysical meaning
	2	2	2	2	**2** - well expressed religious or metaphysical meaning
Potential cultural value					**0** - no potential cultural value
					1 - small potential cultural value
	2	2	2	2	**2** - great potential cultural value

Note: The Bač Fortress [I]; The Bođani Monastery [II]; The Franciscan Monastery [III]; The Turkish Hamam [IV]
Source: Authors' research

The average assessment of cultural value for the Bač Fortress is 2.4, for the Bođani Monastery and Franciscan Monastery 2.2, and for the Turkish Hammam 1.2. The total cultural value for cultural heritage is 8, which indicates the existence of a respectable tourist resource. In order to further strengthen cultural value, it is necessary to analyze trends in similar global tourist markets with more sensitivity, in order to raise quality and make an important competitive step towards increasingly demanding tourists, by defining concrete and realistic activities.

Table 4: Determining the educational value of cultural heritage

CRITERIA	ASSIGNED NUMBER OF POINTS				SCALE
	I	II	III	IV	
Use of cultural heritage for educational purposes					**0** - not used for educational purposes
				1	**1** - Used for educational purposes at one level of education
	3	3	3		**3** - Used for educational purposes at different levels of education

Note: The Bač Fortress [I]; The Bođani Monastery [II]; The Franciscan Monastery [III]; The Turkish Hamam [IV]
Source: Authors' research

The use of the cultural heritage of the Bač Fortress (3), the Bođani Monastery (3) and the Franciscan Monastery (3) for educational purposes was evaluated with the maximum number of points, and to improve this function when it comes to the Turkish Hammam (1) it is necessary to apply modern scientific knowledge and apply already proven practical experiences. The application of old techniques during conservation and restoration works on cultural heritage represents an unusual opportunity for spreading knowledge and acquired skills through the publication of thematically profiled papers in scientific journals. Insufficient representation of papers on the Turkish Hammam can be explained by the state of devastation and the modest promotion so far.

Table 5: Determining the tourist value of cultural heritage

CRITERIA	ASSIGNED NUMBER OF POINTS				SCALE
	I	II	III	IV	
Availability and access					**0** - access via undeveloped land
					1 - Access via trails
					2 - access via developed roads
	3	3	3	3	**3** - access by paved road with parking
Recognizability outside the profession and science					**0** - not recognizable
					1 - recognizable on a local scale
				2	**2** - recognizable on a regional scale
	3	3	3		**3** - recognizable on a national scale

Representation in tourist materials					**0 -** not represented in tourist materials
				1	**1** - very rarely represented in tourist materials
					2 - represented in tourist materials
	3	3	3		**3** - often represented in tourist materials
Equipment and existence of services				0	**0** - no services
					1 - services up to 5 km away
					2 - services within 1 to 5 km
	3	3	3		**3** - services are next to the cultural heritage site
Duration of the season of possible use				1	**1** - use is only possible during the summer
	2				**2** - use is possible outside the winter period
		3	3		**3** - use is possible all year round
Danger of degradation	0			0	**0** - certain degradation
		1	1		**1** - moderate risk of degradation
					2 - no danger of degradation

Note: The Bač Fortress [I]; The Bođani Monastery [II]; The Franciscan Monastery [III]; The Turkish Hamam [IV]
Source: Authors’ research

The average assessment of touristic value for the Bač Fortress is 2.3, the Bođani Monastery and the Franciscan Monastery 2.7, and the Turkish Hammam 1.2. The total touristic value of cultural heritage exceeds other total average values at the location of the municipality of Bač, which is an indicator that authentic cultural heritage can be a true resource catalyst for the revitalization of cultural tourism.

Indicators of tourist value unequivocally indicate the existence of economic indicators that speak in favor of sustainable growth and development and job creation as well as the diverse range of multiplier effects that this type of tourism brings to local development and overall social image.

5. Conclusion

Planned and properly directed sustainable tourist growth and development of the municipality of Bač, based on the valorization of cultural and historical heritage, can simultaneously ensure the improvement of tourism, with all its positive multiplicative reflections, and protection and preservation of authentic and attractive heritage. The proposed criteria for valorization of cultural and historical heritage, integrated through the assessment of scientific, cultural, educational and tourist value, can be expanded with the participation of the local population, tourists and other interested individuals and organizations.

A precondition for more intensive development of sustainable tourism based on valuable cultural and historical heritage is the application of an integrated approach, by all stakeholders who can contribute to its reconstruction, adaptation, rehabilitation and conservation, and the promotion of culture and cultural heritage. Qualitative upgrading inevitably includes adequate interpretation, as a relevant educational function that provides personal experience and new experience each time.

The most significant value of the area of the municipality of Bač is a recognizable and authentic cultural heritage, which needs to be strengthened with creative and innovative content that leads to new purposes. In this context, it is necessary to continuously make efforts to build awareness of the unique value of cultural and historical heritage, which would be incorporated into the identity of the local community.

The authors suggest stronger promotion of the unique and unrepeatable cultural heritage, which will be followed by the creation of a database of scientific works on the cultural heritage and tourist potential of the municipality of Bač. The research showed that authentic touristic values represent a significant indicator of sustainable overall growth, as well as the existence of a wide range of multiplier effects, which can influence accelerated local development. However, the authors warn that the strategic development of the wider historical site of the municipality of Bač should take into account the possible consequences on the physical authenticity of the buildings, as well as the necessary socio-cultural synchronization between the increased tourist demand and the real capacities of the local community.

Detection and valorization of key cultural and historical determinants for the improvement of tourism in the municipality of Bač can significantly contribute to the economic, environmental, and social development of the local community and strengthen the competitive position of tourism, as well as many related activities.

Conflict of interest

The authors declare no conflict of interest.

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Protection of personal data in the tourism sector

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Abstract: This research aims to explain certain aspects of the complex legal system of personal data protection. The paper is based on the analysis of domestic and EU regulations that regulate the rights of citizens to the protection of personal data. The paper provides an overview of the obligations that must be fulfilled by tourism entities in order to ensure that the processing of personal data is carried out in accordance with the law. In addition, the risks associated with the processing of personal data and the possibility to ensure the security of data processed by providers of tourist services are listed. The research showed that there are many open questions in the tourism sector regarding the implementation of regulations on the protection of personal data.

Keywords: personal data, individuals, protection, tourism
JEL classification: K10, Z30

Zaštita podataka o ličnosti u turističkom sektoru

Sažetak: Ovo istraživanje ima za cilj da objasni pojedine aspekte složenog pravnog sistema zaštite podataka o ličnosti. Rad se zasniva na analizi propisa koji na evropskom i nacionalnom planu regulišu prava građana na zaštitu ličnih podataka. U radu je dat pregled obaveza koje treba da ispune turistički subjekti kako bi se osiguralo da se obrada podataka fizičkih lica vrši u skladu sa zakonom. Osim toga, navedeni su i rizici povezani sa obradom ličnih podataka i mogućnosti da se obezbedi bezbednost podataka koje obrađuju pružaoci turističkih usluga. Istraživanje je pokazalo da u turističkom sektoru ima dosta otvorenih pitanja u vezi sa implementacijom propisa o zaštiti ličnih podataka.

Ključne reči: podaci o ličnosti, fizička lica, zaštita, turizam
JEL klasifikacija: K10, Z30

1. Introduction

One of the consequences of information technologies development in the last twenty years is the increase in the importance of information and data. Technological advances have made it possible to digitally collect vast amounts of data and then transmit, process, and transmit it across a global network. Businesses of companies are increasingly focused on adapting their products and services to the needs of consumers and using information from and about

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potential and existing consumers for this purpose. In the course of technological progress, there is a constant transfer of data in social life. After an online purchase or online reservation of services, the system remembers information and data transfer. Based on these data, similar products or services can be recommended to the user and the company can increase its sales or service provision. Data processing is therefore an important success factor, especially in business. The term "processing" includes, among other things, the collection, storage, modification, deletion, dissemination, disclosure through transmission and use of personal data (Chatzopoulou, 2021, p. 125).

The transmission and automatic processing of data have their downsides. If the data is further processed without protection, the information may be freely available to third parties. In this way, misuse of data can easily occur. Given that globalization and related social changes lead to strong networking, it is important to protect data. Data protection generally refers to regulations aimed at protecting personal data and preventing misuse of data by third parties. Since many areas of society are affected, there are different data protection principles.

Defining the concept of data and protection of personal data is not an easy task. Different meanings are used for these terms today. Data protection means the protection of information that is not intended for the general public. Personal data contains information that directly or indirectly relates to a natural person. In this sense, personal information is, for example, first and last name, nickname, e-mail address, citizenship, data from a passport or identity card, travel visas, and data from a health record. However, data protection is not only limited to the protection of personal data. It also includes the protection of an individual's freedom to decide for himself what will happen to his data and when it can be processed. On the one hand, data protection protects citizens from misuse of their personal data. On the other hand, it includes the right of citizens to informational self-determination.

Information self-determination is a topic that is becoming increasingly important in the age of digitization and information technologies. Informational self-determination contains two rights: the right of every person to disclose information about himself and the right to freely decide not to disclose it. In addition, every person has the right to decide what will happen to their data and what it should not be used for. Although the right to informational self-determination is not yet explicitly established by the constitutions of most countries, including ours, according to judicial practice, it represents a basic right to data protection and an expression of the general right to personality. The judgment on the census of the German Federal Constitutional Court was crucial for the establishment of the right to informational self-determination (Judgment of the First Senate of 15 December 1983 - 1 BvR 209/83). The reason for this judgment was the census planned in the first half of 1983 in the Federal Republic of Germany. The State wanted to collect a lot of personal data in the census under the "Census Act", including detailed information about family and civil partnerships, housing situation, educational and vocational training and employment, professional status, working hours and commute. Several constitutional appeals were filed against the planned census, which ultimately led to the so-called census verdict. In this, not only the illegality of the planned census was determined, but also the law on the census was declared unconstitutional. Referring to the general right of personality as a constitutional right, this judgment established the right of citizens to informational self-determination.

Today, a large amount of data is also processed in the tourism sector. Based on the analysis of EU regulations and domestic regulations on the protection of personal data, the following hypotheses were formulated:

H_1: Tourism companies must respect certain principles when processing personal data.
H_2: As a rule, travel companies may not process special categories of personal data.
H_3: Travel companies must respect the rights of natural persons concerning personal data.

2. Materials and methods

2.1. Personal data protection in the European Union

The area of personal data protection at the EU level was first regulated in 1995 (Andonović & Prlja, 2020, p. 119). In the meantime, various external and internal factors, such as the increasing use of the Internet, the development of information and communication technologies, the increasing use of data in business, and significant violations of privacy rights have influenced the need to regulate this area in detail (Andonović & Prlja, 2020, p. 119). In this sense, the General Data Protection Regulation (hereinafter: GDPR) was adopted in the EU on April 27, 2016. This Regulation, which came into force on May 25, 2018, is a far-reaching, uniform and a partially new law on data protection with direct application throughout the EU. This regulation is of great importance, especially with regard to increasingly advanced digitalization as one of the characteristics of the 21st century. Before the entry into force of this Regulation, especially in cross-border traffic, there was legal uncertainty regarding the protection of personal data, both on the side of consumers and on the side of business entities (Feiler & Forgó, 2016, p. 5).

The goal of adopting the General Regulation is to standardize data protection in the EU and thus create the same data protection standards for all member states. In addition to the direct application of the GDPR, member states have the freedom to regulate certain issues, e.g. from which year a minor can effectively consent to the processing of his personal data or whether fines can be imposed on authorities and public bodies (Feiler & Forgó, 2016, p. 6). On the other hand, GDPR does not provide definitive solutions in all areas. Hence, judicial practice, especially of the EU Court of Justice, is of great importance in regulating the protection of personal data in the EU (Fercher & Riedl, 2016, p. 31). However, based on additional information, the Internet provider could identify this visitor. In this case, the identity of the website visitor can at least be determined, which means that the provisions of the GDPR apply to him/her (Feiler & Forgó, 2016, p. 4). For example, when registering on a certain online platform, a natural person does not provide his/her name or any other information, except his/her e-mail address. However, based on this data, that natural person can be identified.

GDPR regulates data protection of natural persons. In other words, legal entities are excluded from the scope of the GDPR, unless the company name, for example, contains the name of a natural person. However, in the tourism industry, companies store the contact details of their partners, which is why the data related to this entry is covered by the GDPR.

The GDPR does not apply to the protection of personal data that is used exclusively for private purposes. These family or private activities include, for example, using social networks exclusively for private purposes (Hladjk, 2016, p. 40). This means that if, for example, an employee of a hotel forms a Viber group for planning joint leisure activities, while the employer does not influence the content or participants of this group, then this form of communication is not covered by the GDPR.

In a territorial sense, the GDPR applies to all processing of personal data within the business activities of entities based in the EU, regardless of whether the processing is carried out in the territory of the EU or outside it (Andonović & Prlja, 2020, p. 122). However, the provisions of the GDPR also apply to data processing carried out by companies based outside the EU but processing personal data of EU citizens, or to companies based outside the EU but with one or more branches in the EU. In this way, the territorial application of the GDPR is largely extended to countries that are not members of the EU, but that have strong economic cooperation with its market. This includes the Republic of Serbia, which, among other things, has good tourism cooperation with entities on the territory of the EU.

The GDPR protects all personal data, both those processed manually and those processed electronically or through video surveillance.

2.2. Personal data protection in Serbia

Our country recognized in time the need to protect personal data. In 2018, the Personal Data Protection Act (hereinafter PDPA – The Law on Personal Data Protection - Official Gazette of the RS No. 87/2018) was adopted in Serbia, which replaced the previous law that has been in force since 2008. The PDPA regulates the right to protection of natural persons in connection with the processing of personal data, the principles of processing, the rights of persons to whom the data refer, the obligations of the processor of personal data, the transfer of personal data to other countries. The PDPA is largely aligned with the GDPR. However, in relation to the GDPR, our Law does not contain a preamble, foresees milder sanctions, and does not regulate video surveillance issues. The PDPA establishes a personal data protection system regardless of whether it is applied by persons under private or public law. In this sense, the PDPA also obliges tourist subjects, such as, for example, travel agencies, hotels, restaurants, airlines. These entities collect various types of data, such as customers' first and last names, addresses, unique identification number, number passports, nutritional information, medical condition or even religious affiliation (Kędzior & Sadowska, 2019, p. 71). In certain situations, these entities transfer data, for example a travel agency transfers data to a hotel, airline or insurance company.

The obligation to protect personal data also exists within the so-called smart tourism activities (Gretzel et al., 2015, p. 42). Unlike e-tourism, which digitally connects individuals with travel companies, smart tourism is based on the application of artificial intelligence, cloud computing, the Internet of Things (Buhalis, 2020, p. 268). Thanks to these technologies, tourists can experience a better, higher quality and more interactive trip (García et al., 2018, p. 168).

The PDPA does not provide for special regulations relating to certain areas of social life. In other words, the Law does not introduce any special conditions for data processing that would be more or less strict compared to other sectors. In the continuation of the paper, an overview of certain provisions of this law will be given, which are of importance for the obligations of tourism entities with regard to the protection of personal data that they encounter in their work.

3. Implementation of regulations on the protection of personal data in the tourism sector

3.1. Principles of personal data processing

Companies must follow certain principles when processing personal data. Random and unplanned data collection is not allowed. Personal data can only be processed legally, for specific purposes and in a factually correct manner. The volume of data processed should correspond to the purpose of the processing. It is questionable whether online retailers, for example, absolutely need a phone number to be able to process an order. However, this does not apply to companies that provide travel services. After fulfilling the purpose of processing, personal data must be deleted.

Data protection includes technical and organizational measures that the company must implement. Employees must be committed to confidentiality and respect for data protection. When working with personal data, companies must pay special attention to the principles of processing established by law.

The basic principle of personal data processing is the legality of the processing. The PDPA in Art. 12 lists the possible legal bases for processing personal data. The first and most common legal basis for processing personal data is the consent of the natural person, i.e. data subject. Consent can be given in writing or electronically by clicking on a specific website. However, subscribing to the newsletter on the travel company's website does not constitute consent to data processing (Pollirer et al., 2017, p. 32). The request for consent must be written in clear and understandable language and must be distinguished from other facts, such as references to other data protection information (Kastelitz, 2017, p. 110). Consent must often be given for each processing separately, if the information being processed differs from one another. For example, when checking in to a hotel, the consent to send advertisements electronically and the consent to process the passenger's health data must not be contained in the same form.

The subject whose data is being processed can revoke his consent at any time. Unlike the GDPR, which stipulated that a minor who has reached the age of 16 can independently give consent for the processing of personal data, our PDPA lowered that limit to 15 years of age. This means that the consent to send the newsletter of the children's resort to a child who has e.g. 13 years old can only be given by a parent or legal representative.

The most common legal basis for the processing of personal data in the tourism sector is that the processing is necessary for the purpose of executing a contract or undertaking actions leading to the conclusion of a contract. In particular, data about the address of a guest who ordered an information bulletin from a travel company can be entered and saved in the user's file for the processing of the order process.

The legal basis for processing personal data is also the legal obligation of the data handler. The Law on Hospitality of the RS in Art. 7, paragraph 1, point 17 prescribes that the caterer is obliged to enter data about the user of the accommodation service daily and regularly in the prescribed manner. In addition, the same Law in Art. 15 stipulates that the caterer who provides the accommodation service is obliged to enter data about the user of the accommodation service through the central information system, in the prescribed manner. For domestic citizens, these data usually include "name and surname, day, month and year of birth and residential address" (The Law on Hospitality, Art. 15, Par. 2). For foreign nationals, these data include "name and surname, day, month and year of birth, citizenship, type, number and date of issuance of the foreign travel document" (The Law on Hospitality, Art. 15, Par. 3). The above data is entered by the caterer through the central information system (E-tourist) based on the data from the identity card, travel document or other public document with a photo. Through this system, registration and de-registration of tourists is carried out, tourist taxes are paid and facilities are categorized. This system gathers all data on caterers and catering establishments in the Republic of Serbia. All the above data are collected based on legal obligation. However, special consent from the guests is necessary for the use of said data for electronic connection with the system of the local or regional tourist association. In practice, this consent is given in an additional checkbox with appropriate information about data processing for this new, different purpose.

The Ministry of Trade, Tourism, and Telecommunications, as well as the local government unit, collect personal data on natural persons who provide catering services in the manner prescribed by the Catering Act (Art. 64-69) and PDPA.

The processing of personal data is lawful when it is necessary to protect the vital interests of the data subject. In tourism, this basis has little application. A possible example in tourism practice is information about the guest's age, physical ability or eating habits in the event of a medical emergency.

The processing of personal data is also legal if the processing is carried out for the purpose of performing tasks in the public interest or for the purpose of exercising the powers prescribed by law. This basis for the processing of personal data would exist in the event that the local government transfers the obligation of guest registration to the local tourist association. Guest data in this case would be processed by the local tourist association for the purpose of performing tasks in the public interest. A contract between the local self-government and the corresponding tourist association is necessary for the execution of works in the public interest in the above given example.

Personal data must be processed fairly. The principle of fairness aims to direct all those who apply legal norms to take care of every processing, which means that facts and norms are interpreted and applied according to the circumstances of each specific case (Andonović & Prlja, 2020, p. 56). Responsible persons should process other people's personal data with full care and respect. An example from tourism practice is a questionnaire that a tourist fills in at a tourist association and that is forwarded to accommodation facilities in a certain tourist region without their consent in order to send them suitable offers. Instead, it is in the interest of the guest that the tourist association sends him collective offers of accommodation facilities, without the need to send his/her data to various tourist companies in the region.

The principle of transparency allows citizens to be aware of all activities related to their personal data. In essence, transparency means that the processing of personal data is carried out in a way that is understandable to the data subject (Kastelitz, 2016, p. 100). For example, a person who fills out a questionnaire on a tourist site directly from the questionnaire should be clear to whom the questionnaire is intended, to whom it can be transmitted, for what purposes the questionnaire data can be used, i.e. for what other similar purposes it can be further used.

Personal data CAN only be collected on the basis of the reasons provided for in advance by law. In other words, personal data cannot be collected before there is a need for their processing. Limitation in relation to the purpose of processing is one of the central principles of European data protection law. Our PDPA stipulates this principle in Art. 5, Paragraph 1, Point 2. The reasons for processing personal data must be stipulated in advance by law. In certain exceptional situations, personal data may be used for purposes other than those for which they were originally collected. It is a condition that other purposes are compatible with the original purpose of data collection. If this compatibility cannot be established, data processing for other purposes is permitted only with the express consent of the processing subject. For example, specific consent or other legal basis is required to send informational brochures or postal Christmas cards to hotel guests.

When there is a need to process personal data from citizens, only those data that are essential for achieving the purpose of the processing can be requested. For example, on a tourist website, in the questionnaire about available rooms or apartments, the user should not be asked in the mandatory field, e.g. about his occupation.

The principle of accuracy means that data stored in databases must be updated and harmonized with changes in the factual situation (Voigt & Bussche, 2017, p. 91). However, in certain situations it is necessary to save information that has been determined to be incorrect. For example, in specialized hotels that provide medical services, a person's medical record may contain a diagnosis that turns out to be incorrect. Regardless of the fact that this information is not correct, it will be kept because it is necessary for the further treatment of that person. Of course, in the appropriate place, it is necessary to make a note about the inaccuracy of certain data.

The storage of personal data is limited to the time that is really necessary to achieve the purpose of processing. Data that are no longer necessary must be deleted. Deleting unnecessary data reduces misuse and inaccuracies of data stored. The PDPA sets out the reasons for which personal data may be stored for longer than the purpose for which the data was collected. These are the following reasons: archiving in the public interest, processing in the interest of historical or scientific research. The period of storage of personal data is easy to determine in those cases where the legal basis for the storage of personal data and the erasure period derives from the law (Hötzendorfer et al., 2018, p. 58). In the tourism sector, there is no legitimate interest in storing an email address after sending a brochure ordered by a client via e-mail.

When processing personal data, processors can find out important information about the life of the individual whose data is being processed. Loss, destruction or misuse of personal data by third parties could cause negative consequences for the rights and interests of the person whose data is being processed, as well as those close to him. For example, information about the tourist destination where the clients of a travel company rest and the vacation period is leaked to the public, which can cause harmful consequences for the rights and interests of the clients of that company. Data processing must be secure and secured by special measures that protect against unauthorized access and misuse (Voigt & Bussche, 2017, p. 92).

Personal data must not be accessible to unauthorized persons. An example of the disclosure of personal information in tourism is a list of travelers that is available to a tour guide (Kędzior & Sadowska, 2019, p. 77). In certain situations, it is necessary for the guide to call the passengers. However, it can be disputed here whether the guide is allowed to read the passenger list out loud. Practice on this matter has not yet been established. Bearing in mind that for security reasons the guide reads the list of passengers he received from the tour operator, we believe that in this case the guide does not violate the rules on the protection of personal data.

3.2. Special categories of personal data

There are categories of personal data that may not be processed as a rule. It is about personal data that enjoys a higher degree of protection compared to the protection that is usually provided to personal data. This type of personal data refers to characteristics of a strictly personal nature, the violation or misuse of which may have negative consequences for the natural person to whom they relate. This group includes data related to: racial or ethnic origin, political opinion, religious or philosophical belief, membership in a trade union, genetic and biometric data, data on health or data on the sexual life or sexual orientation of a natural person (PDPA, Art. 17, Par. 1).

Special categories of personal data are regularly processed in the tourism industry. Primarily, it refers to health data. Health data contains information about the "physical or mental health of a natural person, including data on the provision of health services, which reveal information about his health condition" (PDPA, Art. 4, Par. 1, Point 16). The Court of Justice of the EU interprets the concept of health data very broadly, which, according to this court, refers to all information that affects all aspects of human health - both physical and psychological (Hödl, 2018, p. 26). Data on food allergies and intolerances of guests, which are generally regularly recorded in the hotel and catering industry, also belong to health data.

There are several situations in which the processing of special types of personal data is permitted. The first situation is the consent of the person whose data is in question. Another case is that the vital interests of the individual require the processing of his personal data. In tourism practice, the processing of health data is carried out only if the person to whom the data refer has given consent to the processing. Data on food allergies and intolerances are most often of vital importance for the health of the person to whom the data refer. Therefore, these data can exceptionally be processed without the express consent of the person to whom these data refer (PDPA, Art. 18, Par. 1, Point 2).

In addition to health data, a special type of data that is processed in the tourism industry is data on sexual orientation, that is, the life of a certain person. An example of this is the registration for an event that is expressly organized for persons of homosexual orientation, based on which a conclusion can be drawn about the sexual orientation of those present at that event.

3.3. Rights of natural persons concerning personal data

The PDPA regulates institutes and issues of importance for the protection of personal data in Serbia. As special rights related to the protection of personal data, the Law singles out: the right to information, the right to correction, the right to be forgotten, the right to limit processing, the right to transfer data, and the right to object (PDPA, Art. 21-40).

The right to information gives individuals the opportunity to obtain information on all matters related to the processing of their personal data (Davinić, 2018, p. 52). PDPA envisages the right to be notified by art. 23 determines the range of information provided to the person from whom personal data is collected. The right to information provides data subjects with transparency regarding their personal data being processed. In this context, a natural person has the right to information on whether the processing of his personal data was carried out in a clear and comprehensible form, in writing, orally or electronically. The information must be provided electronically if the request for information is submitted electronically (e.g. by email). Exceptionally, the answer can be given in a different form only if the person concerned agrees to it (Feiler & Horn, 2018, p. 85). Especially in the case of giving information orally, the identity of the person requesting the information should be checked before giving the information. The data must not be given to a person who is not authorized to receive the information. Otherwise, the principle of data confidentiality would be violated. On the other hand, it should not be unnecessarily difficult for a certain person to exercise his right to information (Haidinger, 2016, p. 126). However, if, for example, a person requests information via e-mail about the saved data about the use of his electronic guest card during the last holiday and mentions only his name and the holiday period, the identity of this person should be verified with additional authentication measures, provided that the guest is not clearly identified in the system guest's electronic cards via the e-mail address.

The right to correction and addition of personal data is regulated in Art. 29 PDPA. The right to correction is based on the fact that every natural person has the right to request the correction of incorrect or inaccurate personal data. Correction is required from the person who stores and uses the data. In addition to the correction, natural persons can also request the addition of personal data. Personal data is used daily in the tourism sector for identification, the conclusion of contracts, and realization of various tourist services. A natural person has the right to request the responsible person to immediately correct incorrect data or to request the completion of incomplete data. For example, if a name is misspelled in a holiday reservation, the person responsible is obliged to correct this information. A correct and up-to-date database is also in the interest of responsible persons.

A natural person has the right to request the responsible person to delete his personal data in the cases prescribed by the PDPA in Art. 30, Paragraph 2, Points 1-6. For example, the purpose for which the data was collected has been achieved or the data processing has been carried out in violation of the law. In addition, it may happen that a natural person withdraws consent to processing. In all these cases, the person whose data is in question can request the deletion of the data. According to the law, tourist companies are obliged to store certain personal data, e.g. documents used in accounting. This means that the guest cannot request the deletion of personal data stored in the hotel's accounting (e.g. booking confirmation and hotel invoice). The request for deletion of this data can be rejected with reference to Art. 12, Paragraph 1, Point 5 PDPA. The request for deletion can also be rejected if the processing of personal data is a necessary condition for the realization of the legitimate interests of the responsible person. For example, if incidents occurred during the stay at the hotel that could justify a claim for damages by the hotel against the guest, the guest's request for deletion of personal data may be rejected with reference to Art. 12, Paragraph 1, Point 6 PDPA.

A natural person has the right to request that the processing of his/her personal data be limited by the responsible person if one of the cases stipulated by the PDPA in Art. 31, Paragraph 1, Points 1-4. One of those reasons is that the personal data are no longer necessary for the responsible person to achieve the purpose of the processing, but the person to whom the data refers has requested them in order to submit, exercise or defend a legal claim. For example, a hotel has filed a claim for damages against a hotel guest. The guest has the right to object to the deletion of any video material from the hotel, if he believes that the video material could serve as evidence in the court proceedings the hotel is conducting against him.

The right to data portability gives citizens the opportunity to demand that the entity that disposes of their data transfer it to another entity. In the tourism sector, this right does not have much importance, except in some exceptional cases. For example, the guest has the right to request that the hotel transfers his personal data in case he decides to change hotels.

PDPA in Art. 37 regulates the right to a remedy. Every person has the right to object to the processing of personal data relating to him. The right to object is of great importance in the tourism industry, especially in direct marketing, i.e. advertising.

4. Rights related to automatic processing of personal data

The development of modern technologies has led to the "independent" operation of computers. Computer programs that automatically predict results have proven to be useful tools in making various business decisions, remediating economic losses, and in the decision-making process in everyday matters. Automatic decision-making is used in finance, education, medicine, tourism, and many other areas.

Artificial intelligence technology (hereinafter: AI) has, among other things, the ability to predict, i.e. give recommendations. This ability is based on the ability to use information, that is, data to classify and evaluate different individuals. Thanks to AI, business entities can adapt their products or services to each individual. Unlike traditional software, AI technology can even predict the behavior of individuals. Thanks to this, business entities can provide and improve the range of their products and services, adapting them to the habits and needs of individual clients.

AI-based personalization has the power to improve the quality of travel services as well. Travel companies can use AI to offer their customers personalized recommendations for their services. Namely, tourists are increasingly searching for tourist destinations online, booking travel and accommodation. As a result of this growing trend, tourism companies have new ways i.e. chances to connect with customers. Thanks to AI-based personalization travel companies can adapt their services to suit the requirements, habits, and preferences of each customer.

AI can generally be used to customize the user experience as it can collect, analyze and combine large amounts of data from different sources. Thanks to this, AI can be more effective than traditional personalization techniques. However, AI-based personalization has its drawbacks. Namely, successful personalization requires high-quality data. If the data is missing or incorrect, AI can make recommendations and offers that do not match the individual profile of the client, i.e. it can give results that can lead to unjustified divisions between people, discrimination, labeling of people, and similarly. On the other hand, entities including travel companies that want to increase personalization must take into account the privacy of clients, i.e. comply with regulations on the protection of personal data. Excessive personalization can negatively affect the user experience. Despite the challenges, AI-based personalization is being used in the tourism sector to understand user habits and needs in order to generate personalized travel service recommendations with greater precision. In the tourism sector, especially in smart tourist destinations, chatbots, and virtual assistants are popular that answer the queries of individuals, help them find their way on a certain website, and suggest personalized services (accommodation, transportation, destinations) that clients might be interested in (Masseno & Santos, 2019, p. 8). Thanks to data such as travel history, purchase history, and loyalty program status, the AI-based system will provide personalized offers according to the budget and habits of individuals.

AI has the potential to improve not only the quality of business but also the quality of people's lives. However, AI-based personalization opens up a dilemma – how and where to draw the line between personalization and privacy? In order to protect citizens from the unwanted consequences of automatic decisions by computer programs, data protection systems recognize citizens' special rights in relation to such decision-making. This is also the case with the legal system of Serbia, in which the right of a person to decide whether a decision made solely based on automatic processing of personal data will be applied to him is guaranteed, i.e. from the processing done by the computer program (Art. 38, Para. 1 PDPA). The decision must have a certain legal significance, so only those decisions that produce legal consequences or that significantly affect the rights and interests of a certain natural person are taken into account.

In addition to automatic data processing, citizens have the right to decide whether decisions based on "profiling" will be applied to them. Profiling is defined as "any form of automated processing that is used to assess a specific personality trait, in particular for the purpose of analyzing or predicting a natural person's work performance, economic position, state of health, personal preferences, interests, reliability, behavior, location or movements" (Art. 4, Paragraph 1, Point 5 of the PDPA).

Health tourism can be cited as an example of decision-making based on profiling and automatic data processing. Computer programs in healthcare can classify a certain person in the category of persons most susceptible to thyroid disease and who is therefore recommended to stay at Zlatibor in Čigota - the Specialized Hospital for thyroid diseases. This profiling does not mean that the person already suffers or will suffer from thyroid disease. Aware of the need for special nutrition for thyroid patients, Čigota Specialized Hospital provides personalized meals in accordance with the health condition of the patients (Masseno & Santos, 2018, p. 127).

The person whose data is used in automatic data processing must have the opportunity to express his position regarding the specific decision, as well as to invest in legal remedies if he believes that the decision is not correct or legal. However, the operator must also take adequate measures to protect the rights and interests of the person whose data is used in automatic data processing, such as the inclusion of the human factor in the control of the automated processing process.

Thanks to this right, citizens have the opportunity to decide independently whether to accept personalized results that are obtained based on automatic data processing. In this way, the basic principles of personal data protection, such as transparency, legality of processing, and protection of the legitimate interests of the person whose data is processed, are realized. However, in certain cases, citizens cannot avoid the application of the results of automatic data processing (Art. 38, Para. 2 PDPA). The first case refers to decisions made based on a special regulation that allows automatic data processing. The second case refers to decisions that are necessary for the conclusion or execution of a contract between the person to whom the data refer and the controller. The third case refers to giving express consent to the automated processing of personal data.

In addition to the contract, the basis for automatic data processing can also be a special regulation. In this way, it is possible to enable the automatic processing of personal data as a rule in certain cases, when administrative bodies perform important social tasks (such as public health or national security). However, the regulation that allows automatic data processing must be specifically explained, based on the legitimate expectations of citizens and in accordance with the data protection system.

5. Results and discussion

The topic of personal data protection is a challenge for many travel companies. Travel agencies, caterers, as well as travel and accommodation booking platforms process a large amount of data every day. In accordance with the regulations on the protection of personal data in tourism business, it is important that personal data is inaccessible to others. With the constant traffic of tourists reigning in tourist facilities, data should be well secured. Therefore, tourist entities should first of all protect their computers from access by others. Secure passwords and a good firewall form the cornerstone of IT security in tourism. In addition, very simple things, such as a privacy screen on the computer that blocks the view of other guests' reservations, should be a standard in tourism. However, in addition to the protection of digital data, it is important to implement protection when collecting analog data. Despite the fact that more and more work is done digitally and that the protection of personal data is often equated with the protection of digital data, handwritten data must also be secured. In this sense, cabinets or offices must be locked and documents must not be visible at the reception desk. In general, reception and reservations are the key factor to data protection. In many cases, the so-called tourist tax must be paid. It is not uncommon for there to be forms that must be filled out manually when signing up. And this data must be protected, i.e. provide in an adequate manner.

The implementation of regulations on the protection of personal data in tourism is no different from other business areas. A special challenge in meeting the requirements for the protection of personal data exists on the part of international companies. Namely, hotel guests are often people with foreign citizenship. In this sense, it is necessary that the obligation to notify and statements on data protection be available at least in English. This is the only way to ensure that all interested parties can exercise their data protection rights and understand the purpose of their data collection.

The protection of personal data also applies to online platforms. Therefore, if the reservation of travel, accommodation, etc. is performed through an external booking platform, it must be checked in any case to what extent a contract for the processing of personal data is necessary in the sense of Art. 45 PDPA. In addition, it is important that data is sent only through secure and encrypted access. However, the processing of personal data is not only a process carried out during a reservation or enquiry. Each collection, for example, of a potential customer's IP address, each cookie setting and related data processing constitutes a collection of personal data that is subject to personal data protection. Therefore, travel companies are obliged to use their website in accordance with the regulations on the protection of personal data.

Personal data is not processed only when booking and checking in to a hotel or apartment. Video surveillance is a classic example of the further collection of personal data. Photographs may also constitute personal information if the person concerned is clearly identifiable in the image. Recording of any kind is part of the processing of personal data. Numerous tourist facilities, primarily hotels, use surveillance cameras citing a legitimate interest, such as the safety of employees, protection against burglary, and protection of property or vandalism. A clearly visible sign must be placed in front of the area monitored by the camera, indicating that the area is being monitored.

6. Conclusion

The PDPA contains the rules and basic institutes within the personal data protection system in Serbia. This law has largely aligned personal data protection standards with GDPR as a regulation that has direct application in all EU member states. However, data protection rules and institutes can also be found in other regulations that govern specific areas of social life. In the tourism sector, these are the provisions of the Law on Tourism (Articles 113-118) and the Law on Hospitality (Articles 64-69).

Travel companies collect various personal data in their work. Despite the fact that the domestic and European regulations on the protection of personal data contain certain legal gaps, most companies, including tourist companies, have learned to act appropriately in relation to the application of the regulations on the protection of personal data. However, adaptation of all companies, including tourist companies, to the rules and requirements on the protection of personal data must be done continuously. Every day, various entities collect large amounts of personal data, store them in large databases and process them. With the growth of collected data, the danger of its misuse has also increased. In addition to an effective legal system for the protection of personal data, it is extremely important to establish high-quality personal data security measures. These measures must also be implemented in the tourism sector. Employees in the tourism sector must have good self-control skills. In addition, continuous practical training in the field of personal data protection is necessary. In this sense, this paper represents a contribution to raising awareness and understanding of the meaning and purpose of personal data protection in the tourism sector.

In general, many open questions related to the protection of personal data will be clarified by case law. In the field of electronic communication, it can be expected that the planned new EU Directive on e-Privacy will create significantly more legal certainty in the field of personal data protection on the Internet. Namely, this Directive is primarily intended for companies operating in the digital economy and specifies additional requirements that these companies should fulfill in connection with the processing of personal data.

Conflict of interest

The author declares no conflict of interest.

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A model for preparing manuscripts for submission to the journal Hotel and Tourism Management

Title of the paper in English

Name Surname[1*], Name Surname[2], Name Surname[3]

[1] Institution
[2] Institution
[3] Institution

Abstract: This document presents a model for preparing the camera-ready manuscripts to be submitted for publishing in the journal Hotel and Tourism Management. The abstract briefly summarizes the article, at the same time enabling a reader to assess its relevance. The author(s) should elaborate the **goal** of their research or state the reason for writing the paper. They are additionally required to describe the **methods** used during the research and give a brief description of the **results** and conclusions of the research. The abstract should be between **100 and 150** words long.

Keywords: 3-5 keywords
JEL classification: 10pt (http://www.aeaweb.org/jel/jel_class_system.php)

Naslov rada na srpskom jeziku

Sažetak: Ovaj dokument predstavlja obrazac za formatiranje radova tako da izgledaju kao da su već spremni za štampu. Sažetak predstavlja kratak informativni prikaz sadržaja članka koji čitaocu treba da omogući brzu i tačnu ocenu njegove relevantnosti. Autori treba da obrazlože **cilj** istraživanja ili navedu razlog zbog koga pišu članak. Zatim, potrebno je da opišu **metode** korišćene u istraživanju i ukratko opišu **rezultate** do kojih su došli u istraživanju. Sažetak treba da sadrži od **100 do 150** reči.

Ključne reči: 3-5 ključnih reči
JEL klasifikacija: 10pt (http://www.aeaweb.org/jel/jel_class_system.php)

1. Introduction

Papers should be written **in English** using Microsoft Word for Windows. The paper should be between **10** and **15** full pages long including the figures, tables, references list and appendices. The page should be formatted as **B5 (JIS)**. Allow **20mm** for the bottom and top margins and **25mm** for the left and right margins on a page. The line spacing within a paragraph is single whereas the spacing between two paragraphs is **6pt**. The text should be written using **Times New Roman** font. The maximum number of authors per paper is **three**,

[*] e-mail address of the correspondent author

however, the Editor-in-Chief of the journal has an exclusive right to approve a larger number of authors per paper in exceptional situations.

Author(s) is(are) encouraged to propose the **hypotheses** or **research questions** in the line with the aim and type of conducted research.

2. Background

The title page should contain the Title of paper in English (16pt). Names of authors, institutional affiliation, addresses and e-mail addresses should be typed as shown at the previous page. After the address of the last author, leave an empty row followed by a short abstract (10pt). Keywords should follow the abstract. Below the keywords, the title of paper and the abstract are to be given in Serbian.

For numbered first-level subtitles use a bold font of 12pt whereas a bold font of 10pt is used for second-level subtitles. The text and the references list should be written using the font size 10pt.

3. Materials and methods

Materials and methods section should provide a reader with sufficient details and argue all the necessary aspects in order to allow other researchers to replicate the research and build the published results.

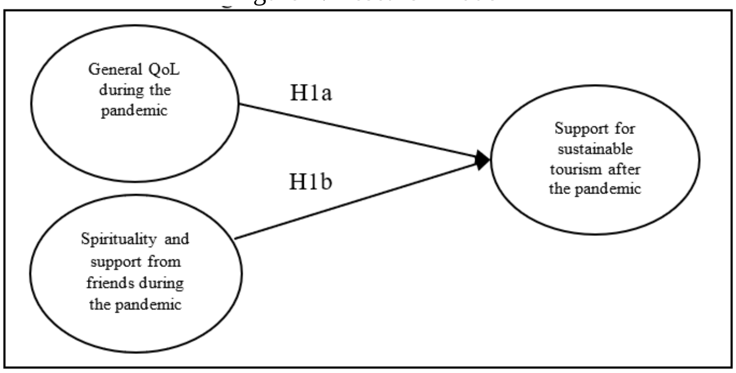
4. Results and discussion

The results obtained in the research should be described in this section. The discussion should highlight the main findings.

Figures, tables and equations

All illustrations whether diagrams, photographs or charts are referred to as Figures. The name and number of figures should be centered on the line above a figure.

Figure 1: Research model



Source: Authors' research

The equations are written using Microsoft Word (MathType); they are consecutively numbered and centered.

$$PVo = \frac{FVn}{(1+i)^n} \tag{1}$$

The name and number of tables should be centered above the table.

Table 1: Results of multiple regression analysis

Variable	ß	T	Sig.	VIF
Textual comments	0.609	14.071	0.000*	1.000
Photos	0.484	11.172	0.000*	1.000
Rating	0.152	3.513	0.001*	1.000

* The value is significant at the level equaling 0.05
Source: Authors' research

If the study findings were presented graphically or in a table, author(s) is(are) encouraged to state the source below the picture or table in the following form: **Author's research** (single-authored paper) or **Authors' research** (co-authored paper).

5. Conclusion

The conclusion summarizes the results achieved during the research, along with the **limitations of the conducted research** and **future research recommendations**.

Acknowledgement

For papers that came as a result of the project or programme, the title and number of the project, i.e. programme, and the name of the institution supporting the project would be appreciated. If persons other than authors were involved in important aspects of the preparation of the manuscript, their contribution should be acknowledged. If the paper was previously presented at a scientific conference (with the same or similar title), author(s) is(are) encouraged to specify it within this section. If submitted paper, or some part of the paper, represents an excerpt from the author's PhD thesis, the author must clearly specify it within this section.

Conflict of interest

The author(s) declare no conflict of interest.

References

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