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МЕЂУНАРОДНИ ЧАСОПИС
ЗА ЕКОНОМСКУ ТЕОРИЈУ И ПРАКСУ И ДРУШТВЕНА ПИТАЊА

ЕКОНОМИКА

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ИЗДАВАЧ: Друштво економиста "Економика" Ниш
СУИЗДАВАЧИ: Институт за економику пољопривреде - Београд, Економски факултет у Суботици, Друштво економиста Ниша, Факултет за примењени менаџмент економију и финансије МЕФ - Београд

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2. Часопис су покренули Друштво економиста Ниша и Друштво инжињера и техничара Ниша (остало као издавач до краја 1964. године). Удружење књиговођа постаје издавач почев од броја 6-7/1958. године. Економски факултет у Нишу на основу своје одлуке броја 04-2021 од 26.12.1991. године постао је суиздавач “Економике”. Такође и Економски факултет у ПриШтини постао је суиздавач од 1992. године. Почев од 1992. године суиздавач “Економике” је и Друштво за маркетинг региона Ниш. Као суиздавач “Економике” фигурирали су у току 1990-1996. године и Фонд за научни рад општине Ниш, Завод за просторно и урбанистичко планирање Ниш и Корпорација Винер Брокер Ниш.

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IMPLEMENTING ARTIFICIAL INTELLIGENCE IN TRAVEL SERVICES, CUSTOMER SATISFACTION GAP STUDY AT SERBIAN AIRPORTS

Abstract

AI technologies have significantly transformed various sectors, including travel and airport operations. This research aims to investigate the implications of implementing artificial intelligence (AI) in airport services on passenger satisfaction and overall travel experiences, as well as how AI technology shapes the way airports support passengers throughout their journey. The study conducted empirical research at Serbian airports with a sample size of 668 passengers. Participants provided their attitudes and satisfaction ratings on 10 statements regarding the impact of AI technology implementation in airport services. The findings from regression analysis reveal a high level of AI implementation in airport services, particularly concerning passenger experience and security. However, passengers express less satisfaction with the implementation of chatbots and virtual assistants, AI algorithms, and certain AI tools that do not meet their expectations. Specifically, passengers feel they do not always receive sufficient instant responses, real-time flight information in the case of delays, or effective issue resolution at the analyzed airports. These results contribute valuable insights to the AI literature and offer implications for future implementations of these technologies in industry, marketing, and technology development. Moreover, they can guide managerial practices and investments in future digital technologies aimed at enhancing passenger experience.

Keywords: *artificial intelligency, passanger satisfaction, passanger experience, Serbia, travel industry.*

JEL: *M15, Q31, Z32, 014, R41.*

ПРИМЕНА ВЕШТАЧКЕ ИНТЕЛИГЕНЦИЈЕ У УСЛУГАМА АВИПРЕВОЗА, ГЕП СТУДИЈА ЗАДОВОЉСТВА КОРИСНИКА НА АЕРОДРОМИМА У СРБИЈИ

Сажетак

Технологије ВИ су значајно трансформисале различите секторе, укључујући путовања и аеродромске услуге. Ово истраживање има за циљ да

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проучи импликације примене вештачке интелигенције (ВИ) у аеродромским услугама на задовољство путника и укупна искуства путовања, као и на то како ове технологије обликују начие на које аеродроми подржавају путнике током њиховог путовања. Спроведено је емпиријско истраживање на српским аеродромима на узорку од 668 путника. Учесници су дали своје ставове и оцене задовољства на 10 изјава у вези са утицајем примене ВИ технологије у аеродромским услугама. Налази из регресионе анализе откривају висок ниво примене вештачке интелигенције у аеродромским услугама, посебно у погледу искуства путника и њихове безбедности. Испитаници су, такође изразили мање задовољства код примене четботова и виртуелних асистената, алгоритама вештачке интелигенције и одређених ВИ алата који не испуњавају њихова очекивања. Сматрају да не добијају увек тренутне одговоре, информације о лету у реалном времену у случају кашњења, недовољна је ефикасност у решавању проблема на анализираним аеродромима. Ови резултати доприносе литератури о вештачкој интелигенцији, маркетингу, искуству коринсика, као и подтицању будуће примене ових технологија у индустрији. Доприноси и менаџерској пракси и улагањима у будуће дигиталне технологије са циљем побољшања искуства путника.

Кључне речи: *вештачка интелигенција, задовољство путника, искуство путника, Србија, туристичка привреда*.

Introduction

As opportunities expand and societal interests evolve, more people are inclined to travel and explore new destinations. The demand for air travel is projected to continue rising, forecasted to 8.2 billion annually by 2037 (IATA report, 2024). The growth is expected to generate substantial global benefits, potentially supporting 100 million jobs over the next 20 years. While this growth represents a significant success for the aviation industry, it also poses considerable responsibilities for airports and airlines. To manage the associated safety risks, strict regulations for passengers, staff, and aircraft must be rigorously enforced. Effective management is crucial to ensure safety throughout airport processes and flights, necessitating updates to handle the increasing number of passengers. Passengers now seek a connected, safe, secure, seamless, efficient, and highly personalized travel experience. Technological advancements (Miletić et al., 2020; Špiler et al., 2023; Jevtić et al., 2014; 2020; 2024), adoption of digital processes for assessing and identifying travelers' needs have significantly impacted the aviation industry (Ćurčić & Grubor, 2023; Srebro & Jevtić, 2024; Srebro et al., 2024). Consequently, the authors conducted empirical research with 668 passengers from Serbian airports in 2023 to assess passenger's satisfaction with the level of AI implementation in airport services, as an extension to bigger research on relations of peeved quality of airport services (Ćurčić, 2023). The paper addresses the following research questions: RQ1: How satisfied are customers with the AI-based services provided at these Serbian airports?, RQ2: What are the primary discrepancies between customer expectations and actual experiences with AI technologies in travel services at Serbian airports?, RQ3: Which AI technologies are most effective in enhancing customer satisfaction in the context of travel services at Serbian airports?, RQ4: What enhancements can be made to current AI implementations to better align with customer expectations and enhance overall satisfaction? The abstract, introduction, and literature review are provided in the first part of the paper, while the research description, final results, discussion, conclusion, and references are presented in the second part.

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Literature review

Main Artificial Intelligence Technologies Implemented in Airport Services Concerning Customers is:

- Facial Recognition Systems, employed for security and boarding processes to enhance efficiency by quickly and accurately verifying passenger identities. The implications of using facial recognition technologies in airports and other settings, particularly concerning privacy and bias, are discussed in works by Ho et al., 2024; Yeung et al., 2020);
- Automated Check-In and Bag Drop. AI-powered kiosks allow passengers to check in and drop off their luggage without human assistance, reducing wait times and streamlining the process. Self-service bag drop systems enhance the passenger experience by reducing congestion, improving space utilization, and increasing passenger satisfaction, though initial resistance from passengers unfamiliar with the technology is noted (BEUMER Group, 2021). Additionally, automated bag drop systems are crucial for streamlining airport operations, improving efficiency, and managing increased passenger volumes while reducing manual labor costs (AIQ Consulting, 2022);
- Chatbots and Virtual Assistants. These AI technologies provide real-time customer support, answering queries related to flight schedules, gate information, and general airport services through text or voice interfaces. Agarwal et al. (2022) provide a comprehensive analysis of the literature on chatbots and virtual assistants across various industries, including airport services, highlighting technological advancements and research trends in this field. Bălan (2023) systematically reviews the business research literature on chatbots and voice assistants, emphasizing their transformative role in the customer interface across sectors, including travel and hospitality. The adoption of AI chatbots in travel and tourism services is examined by Springer

(2023), focusing on how these technologies enhance customer service, streamline operations, and improve the overall passenger experience, as well as exploring future trends; Personalized Customer Service. AI algorithms analyze passenger data to offer personalized recommendations and services, such as lounge access, dining options, and retail offers. Research by Ryu and Park (2019) and Redha (2013) provides insights into personalized customer service in airports, including customer relationship management, passenger behavior and satisfaction, the impact of service quality on the overall experience, and systematic literature reviews on personalized services;

- Security Screening Enhancements. AI technologies improve the effectiveness of security screenings by analyzing X-ray images, detecting prohibited items more accurately, and speeding up the screening process. Enhancing security screening at airports is critical for ensuring passenger safety and preventing security threats (Alrayes et al., 2022);
- Language Translation Services. AI-powered translation tools assist international travelers by providing real-time translations of signs, announcements, and customer service interactions. These services are vital for facilitating communication between passengers and airport staff, particularly in international airports.

Methodology

The empirical research sample consists of 668 respondents, passengers in transit, either transferring, departing, or arriving at airports in Serbia in 2022, during defined times. Data was collected online using a structured questionnaire, which included 8 general questions about the respondents' profiles and 10 statements related to the key research variables. The study defines the independent variable as the Level of AI technologies used in airport services (LAI) and the dependent variable as the Passenger's Satisfaction Level (PSL). The hypothesis formulated for this study posits that the level of AI technologies implemented in airport services (LAI) significantly impacts the level of passenger satisfaction (PSL). Table 1 presents descriptive statistics, including frequencies and probabilities, detailing the profile of the respondents.

Table 1. Descriptive Statistics on Respondent Profiles

Level	Sub-Level	Count	Prob
Airports/Serbia	Belgrade	404	0.60479
	Niš	264	0.39521
Gender	Female	277	0.41467
	Male	391	0.58533
Level of education	Higher education	361	0.54042
	Secondary education	307	0.45958

Level	Sub-Level	Count	Prob
Age	(18-28)	140	0.20958
	(29-42)	262	0.39222
	(43-56)	208	0.31138
	(57-65)	45	0.06737
	(>65)	13	0.01946
Social status	Employed	561	0.83982
	In pension	13	0.01946
	Unemployed	94	0.14072
Level of personal income (€)	>1000	117	0.17515
	From 300-500	158	0.23653
	From 501-700	208	0.31138
	From 701-1000	185	0.27695
Travel experience	With	449	0.67216
	Without	219	0.32784
Travel direction	Departure / Arrival	596	0.89222
	Transfer	72	0.10778
Total		668	1.00000

Source: Authors' calculations

The study employed correlation and regression analyses, performed using SAS JMP 17 software. Respondents rated their opinions on a weighted Pearson scale from 1 to 5, where 1 signifies complete dissatisfaction, 2 signifies partial dissatisfaction, 3 signifies neutrality, 4 signifies partial satisfaction, and 5 signifies complete satisfaction (T.2).

Table 2. Distribution of respondents' attitudes towards various statements

Claims	Attitude				
AI technologies level in the airports' services (LAI)	1	2	3	4	5
LAI1. Personalized travel recommendations enhance the overall travel experience.	41	70	89	270	198
LAI2. Chatbots and virtual assistants provide instant responses, real-time flight information, and issue resolution.	42	73	97	261	195
LAI3. AI-driven facial recognition technology automates check-in, security screening, and boarding, optimizing passenger flow, reducing wait times.	36	70	107	259	196
LAI4. AI algorithms improve booking and reservation processes	71	74	174	121	228
LAI5. AI-driven video surveillance systems significantly enhance passenger and airport security.	41	73	94	276	184
Passenger's satisfaction level (PSL)					
PSL1. Passenger satisfaction is the process of evaluating how well the AI technologies used in airport services meet passengers' needs.	47	69	93	271	188
PSL2. Passenger satisfaction also includes dissatisfaction when the level of AI technology used does not meet their expectations.	73	95	220	157	123
PSL3. The value of airport services matches the price paid by the passenger.	28	38	62	129	411

PSL4. Passenger satisfaction is an emotional response to the experience (pleasant/unpleasant) with the level of AI technology used in airport services.	43	82	107	256	180
PSL5. Passenger satisfaction with airport services is an expression of happiness resulting from the development of the passenger's own digital skills.	49	69	104	260	186

Source: Authors

Results

Table 3. Means and values and standard deviation for the variables

Variables	Mean	Std Dev
AI technologies used in the airports' services (LAI)	3.7086826347	1.1620625054
Passenger's satisfaction level (PSL)	3.7233532934	1.1406590119

Source: Authors

The data in Table 3 indicates that AI technologies are relatively well integrated into airport services at Serbian airports. The average value for the level of AI integration (LAI) is 3.709, and the average passenger satisfaction level (PSL) is 3.723, suggesting a generally high level of satisfaction among respondents. The standard deviation for LAI is 1.162, indicating some variability in perceptions of AI technology use, with some respondents perceiving a high level of use. Similarly, the standard deviation for PSL is 1.141, reflecting variability in passenger satisfaction and indicating diverse experiences and satisfaction levels among passengers. Regarding the gap study for the statements, the research results show that passengers believe: LAI2: Chatbots and virtual assistants do not provide sufficient instant responses, real-time flight information, or issue resolution at the analyzed airports. Similarly, LAI4, which concerns AI algorithms improving booking and reservation processes, received lower scores (mean value 3.54, standard deviation); and PSL2 (mean value 3.24, standard deviation): Passenger satisfaction includes dissatisfaction when the level of AI technology used does not meet their expectations, also received lower scores.

Table 4. Parameters

Term	Estimate	Std Error	t Ratio	Prob>|t|	Std Beta	VIF
Intercept	0.1588869	0.030028	5.29	<0.0001	0	.
AI technologies used in the airports' services (LAI)	0.9611139	0.007727	124.39	<0.0001	0.979148	1

Source: Authors

From Table 4, it can be concluded that both coefficients (Intercept and AI technologies level used in airport services (LAI)) are highly statistically significant, with p-values less than 0.0001. This indicates that both coefficients are significant predictors of the dependent variable, passenger satisfaction level (PSL). According to the passengers' assessments, the level of AI technologies used in airport services (LAI) has a very strong positive effect on PSL, with a standardized beta coefficient of 0.979148. This implies that an increase in the level of AI technologies significantly and positively correlates with, and thus increases, passenger satisfaction (PSL). Low standard errors (0.030028 for the intercept and 0.007727 for the level of AI technologies) indicate high precision in the coefficient estimates. A VIF value of 1 for the level of AI technologies indicates no multicollinearity issues, suggesting that the research model is stable and the coefficients are reliably interpretable. Respecting above results the further formula can be defined:

$$\text{Passenger's satisfaction level (PSL)} = \\ =0.1588869+0.9611139\cdot \text{AI technologies level in the airports' services (LAI)} \tag{1}$$

This function shows that, with a constant intercept value of 0.1588869, each one-unit increase in the level of AI technologies used in airport services (LAI) contributes to an approximate increase of 0.9611139 units in passenger satisfaction level (PSL). The dominance of higher education among the sample, along with a higher proportion of frequent travelers (67%), influenced the research results favoring the utilization of AI technologies in airport hubs. This trend is further accentuated by the predominance of younger travelers who actively seek AI tools to evaluate airport service quality, reflecting their digitally savvy nature and specific travel service requirements. Additionally, the significant presence of employed travelers in the sample further reinforces this inclination towards AI technology adoption. Based on given analysis, the research hypothesis can be confirmed H_0= AI technologies implemented in airport services (LAI) has a significant impact on passenger**'s** satisfaction (PSL). (The assessment of statistical significance it is [$F(1, 666) = 15472.23$, $p < 0.0001$].

Conclusion

The research on AI technologies used at Serbian airports, assessed through passenger feedback, indicates a generally positive outcome concerning customer satisfaction and the level of AI implementation. Passengers' assessments reveal a strong positive correlation between AI integration and their satisfaction levels. The findings demonstrate that AI technologies are relatively well integrated into airport services at Serbian airports. However, there is notable variability in passenger experiences and satisfaction levels. The gap analysis identifies specific areas requiring improvement, including the performance of chatbots and virtual assistants in providing instant responses and real-time flight information, as well as the effectiveness of AI algorithms in booking and reservation processes. These tools did not consistently meet passenger expectations. This research highlights the substantial benefits and impacts of AI on airport management. Future investments should prioritize enhancing operational efficiency, improving intelligent decision-making, bolstering safety and security measures, personalizing passenger experiences, and achieving cost savings and revenue generation. AI-powered systems have the potential to automate and optimize various airport processes, offering personalized services and improved experiences to passengers.

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EVALUATING THE SIGNIFICANCE OF ARTIFICIAL INTELLIGENCE (AI) IN ACADEMIC PLATFORMS BY USING PIPRECIA-S METHOD

Abstract

The purpose of this paper is to determine the importance of artificial intelligence (AI) on academic platforms by utilizing a multi-criteria determination method. The aim is to enhance our understanding of how incorporating AI can enhance the efficacy and effectiveness of the study process. The study employs the Simplified PIPRECIA (Pivot Pairwise Relative Criteria Importance Assessment) method to assess the significance of various factors and characteristics when choosing an academic platform. Five decision-makers conducted a comprehensive literature review to evaluate a list of elements and characteristics of three platforms. The paper begins with an overview of the theoretical foundation and methodology, then presents the research findings and discusses their implications. The results corroborate the relevance of multi-criteria decision-making methods (MCDM) in this context, providing authoritative insights and demonstrating their advantages. The conclusion emphasizes the potential application of these results to make informed choices about academic platform selection, ultimately contributing to improved learning outcomes and research efficiency.

Key words: *PIPRECIA-S, MCDM, Artificial intelligence (AI), academic platforms.*

JEL classification: C44, M12

ЕВАЛУАЦИЈА ВЕШТАЧКЕ ИНТЕЛИГЕНЦИЈЕ (АИ) НА АКАДЕМСКИМ ПЛАТФОРМАМА ПРИМЕНОМ PIPRECIA-S МЕТОДЕ

Апстакт

Сврха овог рада је да се утврди значај вештачке интелигенције (АИ) на академским платформама коришћењем методе вишекритеријумског одређивања. Циљ је да побољшамо наше разумевање како укључивање вештачке интелигенције може побољшати ефикасност и ефективност процеса студирања. Студија користи Симплифиед ПИПРЕЦИА (Пивот Паирвисе Релативе Цритериа Им-

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портанце Ассессмент) метод за процену значаја различитих фактора и карактеристика при избору академске платформе. Пет доносиоца одлука је спровело свеобухватан преглед литературе да би проценило листу елемената и карактеристика три платформе. Рад почиње прегледом теоријске основе и методологије, затим представља налазе истраживања и разматра њихове импликације. Резултати потврђују релевантност метода вишекритеријумског одлучивања (МЦДМ) у овом контексту, пружајући ауторитативне увиде и демонстрирајући њихове предности. Закључак наглашава потенцијалну примену ових резултата за доношење информисаних избора о избору академске платформе, што на крају доприноси побољшању исхода учења и ефикасности истраживања.

Кључне речи: ПИПРЕЦИА С, МЦДМ, Вештачка интелигенција, академске платформе.

Introduction

Artificial intelligence (AI) has significantly changed academic and research platforms, fundamentally changing several aspects of education and administrative activities (Ahmad et al., 2022). Artificial intelligence (AI) advancements have significantly transformed information development, causing a shift in traditional research methods and opening opportunities for exploration across various disciplines (Lainjo, 2024). As the academic community places more emphasis on achieving efficient outcomes using AI, there are growing concerns about how this may affect knowledge sharing and research progress (Markowitz, 2024). Tang (2023) emphasizes the importance of transparency in academic writing, especially when using generative AI, to uphold scholarly integrity.

The effect of AI expands beyond academics and reaches other businesses, where it improves safety and security in social media and brings about a revolution in online education (Chaiyarak et al., 2022; Hakimi, 2024). In scientific research, AI and machine learning models expedite material development and enable autonomous scientific exploration via self-driving laboratories (Park et al., 2023; Seifrid et al., 2022). Digital platforms utilize artificial intelligence (AI) to improve efficiency and elevate consumer interaction (Brecht et al., 2021).

ResearchGate, Google Scholar, and Semantic Scholar demonstrate the transformative impact of AI-powered platforms on the sharing and accessibility of information in the research community. These platforms provide a diverse range of services, including articles, research papers, and scientific publications, to promote scientific advancement (Fan, 2020). Nevertheless, there are still obstacles to overcome to maximize the effectiveness of AI, improve sophisticated methodologies, and guarantee the transparency of models in academic settings (Ahn & Al, 2024).

To summarize, the rapid progress of AI, driven by extensive data training and hardware advancements, is continuously pushing the development of complex algorithms that impact several areas of human understanding (Taha et al., 2022). The incorporation of artificial intelligence (AI) into academic platforms not only improves research capacities but also presents issues that necessitate ongoing improvement and adjustment in AI applications (Gupta, 2024).

ResearchGate, Google Scholar, and Semantic Scholar are significant digital platforms that serve as important online academic networks. These platforms are vital in promoting collaboration among researchers, facilitating the sharing of data, organizing research projects, and improving scholarly communication (Brack et al., 2020). These platforms, which have a large number of members, offer opportunities for academics to exchange articles and data material and interact with a wide audience (Flanagin et al., 2023). Google Scholar is a popular academic search engine that catalogs a vast number of scholarly publications from different fields of study. It provides a user-friendly interface and a large collection of academic materials (Greenberg, 2020). Semantic Scholar is a research tool that uses artificial intelligence, namely natural language processing and machine learning, to improve the search and retrieval features of scholarly papers (Chu et al., 2022).

The incorporation of artificial intelligence (AI) into systems such as Google Scholar and Semantic Scholar has fundamentally transformed the manner in which academics get and engage with scholarly literature (Hsu, 2023). These platforms, through the use of AI and machine learning, have the capability to offer scholars scientific literature that is both more pertinent and easily accessible. This, in turn, assists in the process of scientific discovery and the diffusion of knowledge (Shehata & Fatouh, 2021). Semantic Scholar is notable for its AI-powered structure, which allows for sophisticated understanding of research papers and grants access to a vast collection of scholarly publications, such as conference proceedings and journals (Maatouk, 2022). The platform's dedication to guaranteeing prompt and effective services for the research community highlights the significance of AI in enhancing scholarly search experiences (Lainjo & Tsmouche, 2023).

Although AI shows potential for improving research procedures and academic communication, there remain obstacles concerning trust and comprehension among users (Cao et al., 2021). Researchers' understanding of the regulations and techniques related to AI systems may be lacking, which raises worries about the dependability and ethical consequences of AI-based platforms (Kostagiolas et al., 2020). To promote higher adoption and utilization of AI technologies among researchers, it is essential to tackle trust issues and increase awareness of the potential and limitations of AI in academic contexts (Thomas et al., 2023).

Academic publishing is developing AI applications to enhance process efficiency and increase productivity (Ezenwoke & Emebo, 2020). Authors and publishers are using AI models to assist in tasks like content production, peer review, and data analysis, aiming to reduce human involvement and enhance productivity (Janssen et al., 2020). AI can help academics streamline their publication workflow by automating specific tasks. This includes reducing redundancy, enhancing data accessibility, and optimizing the distribution of scholarly work (Al-Kadhimi et al., 2023). However, the incorporation of AI in academic writing raises significant ethical, prejudice, and transparency concerns that require meticulous resolution (Heidari et al., 2021).

AI's influence on scholarly literature is significant, as AI technologies are shaping the methods of conducting, publishing, and accessing research (D'Souza et al., 2021). The academic ecosystem is adapting to include advanced AI solutions, such as AI-driven search engines and AI-authored material, which present novel opportunities for the exploration and sharing of knowledge (Can et al., 2021). To effectively utilize AI technology in their scholarly pursuits, researchers and academics must remain updated on the newest advancements in AI tools and platforms (Wright, 2024).

ResearchGate, Google Scholar, and Semantic Scholar are essential resources for researchers and academics. They provide opportunities for cooperation, data sharing, and scholarly communication (Bah & Artaria, 2020). The incorporation of artificial intelligence (AI) into platforms such as Google Scholar and Semantic Scholar has fundamentally transformed the process of searching for and retrieving scholarly material. Researchers have access to a diverse array of academic resources because numerous sources have been integrated (Marar, 2024). To enhance their capacity to explore and assess these resources, academics can employ systematic methods for making decisions, such as the PIPRECIA method established by Stanujkic et al. According to Mladenović et al. (2022), implementing AI in academic settings requires addressing trust concerns and boosting comprehension of its potential.

MCDM has been used to solve a various of problems in different areas (Tomašević et al., 2020; Stanujkić et al., 2021; Karabasevic et al., 2019; Stanujkic et al., 2017). Hadad (2023) has illustrated that this approach is applicable in a variety of contexts, such as learning assessments. The Simplified PIPRECIA Method assists decision-makers in comprehending the influence of many factors, which ultimately results in the facilitation of decisions that are more properly informed. Aytekin (2022) demonstrated the applicability of the fuzzy PIPRECIA approach in the selection of vehicle monitoring systems, highlighting its efficacy in decision-making. In addition, the advancement of AFL through platforms such as Educandy, as emphasized by Maryanti et al. (2022), showcases the capacity of technology-enhanced learning approaches to promote educational achievements and student involvement.

Zhang (2022) investigates the correlation between deep learning ideas in education and systematic assessment and decision-making procedures, such as those supported by PIPRECIA. These techniques prioritize the use of effective learning mechanisms, which in turn leads to improved educational outcomes. According to Petrović et al. (2019), multi-criteria decision-making approaches (MCDM) like PIPRECIA and ARAS assist decision-makers in impartially assessing options using several criteria. Jocic et al. (2020) evaluated the efficacy of PIPRECIA and ARAS in selecting e-learning courses while guaranteeing alignment with established criteria and learning objectives. This study emphasizes the effective use of PIPRECIA in educational decision-making processes. Zhang (2022) explores the utilization of Piaget's ideas in scientific education, highlighting the significance of constructivist methods that are in line with systematic evaluation and decision-making principles. This method emphasizes the importance of active learning and direct experience in obtaining information.

Hadad et al. (2023) applied the simplified PIPRECIA method to assess and prioritize students according to their learning evaluations. This study provided evidence of the effectiveness of PIPRECIA in objectively and comprehensively evaluating learning outcomes and student performance.

Jirasatjanukul (2023) conducted research on novel educational approaches, including cloud-based constructivism and networked learning. The study proposed that the use of structured decision-making methodologies, such as PIPRECIA, might improve the implementation and evaluation of these models. Verna (2020) highlighted the significance of adaptation in both learning and teaching approaches. The study underscored the importance of employing comprehensive teaching approaches, supported by systematic decision-making procedures like PIPRECIA. This approach is essential for maximizing educational results and meeting the different learning demands of students. Schoors et al. (2021) conducted a systematic review of digitally customized learning, emphasizing the importance of identifying the distinctive characteristics of students. PIPRECIA uses criteria-based evaluation to tailor learning experiences to individual needs. Ranjbaran (2022) investigated the shift from traditional classroom lectures to blended learning environments that use digital technologies. The study highlighted the need for employing innovative teaching methods and suggested that PIPRECIA might aid in the selection of appropriate educational instructional strategies, ensuring a comprehensive and effective approach. Samani et al. (2022) investigated the use of emotional learning analytics to improve student engagement. Their study showed the efficacy of data-driven approaches such as PIPRECIA in enhancing learning experiences by using emotional responses, hence promoting more student engagement and satisfaction. Nahum (2022) prioritized the development of 21st-century abilities in education, highlighting the importance of employing diverse teaching methods. This notion is in line with PIPRECIA S systematic evaluation and decision-making procedures, which help educators create approaches that foster important abilities in pupils. In conclusion, using PIPRECIA and related decision-making methods in schools is a structured way to evaluate and improve many aspects of teaching and learning. These solutions offer instructors the information to make educated judgments, resulting in improved educational results and a more streamlined learning environment.

Various business and research domains, including PIvot Pairvise Relative Criteria Importance Assessment (PIPRECIA), have employed MCDM approaches. These methodologies provide an impartial and systematic assessment of choices, considering several factors (Petrović et al., 2019; Ćirić et al., 2020). The MCDM writers have employed these methodologies to address several challenges in the field of tourism (Lin 2020; Yang et al., 2020). Numerous domains, including hospitality, tourism (Stanujkić et al., 2021), information technology, user satisfaction evaluation (Stanujkić et al., 2019), quality assessment of e-learning materials (Jaukovic Jocic et al., 2020), personnel selection (Popović et al., 2021; Ulutaş et al., 2020), employee motivation (Đukić, T., 2022), the aviation industry (Bakir et al., 2020), and transport company selection problem-solving (Ulutaş et al., 2021), have applied the PIPRECIA method. The goal of this study is to establish the primary elements and standards used in the process of selecting human resources using the PIPRECIA method.

Method

Stanujkic et al. facilitate the definition of importance in group decision-making using the PIPRECIA method. Kersuliene et al. initially devised the SWARA method, which was perceived as deficient in its ability to pre-sort criteria according to their anticipated significance.

PIRECIA method can be illustrated by the following series of steps:

***Step* 1**. Selection of the evaluation criteria where presorting is not mandatory.

***Step* 2**. Determination of the relative importance that begins from the second criterion as follows:

$$s_j :\ s_j = \begin{Bmatrix} >1 & when & C_j \succ C_{j-1} \\ 1 & when & C_j = C_{j-1} \\ <1 & when & C_j \prec C_{j-1} \end{Bmatrix}. \ (1)$$

***Step* 3**. Definition of the coefficient in the following way: k_j

$$k_j = \begin{Bmatrix} 1 & j=1 \\ 2-s_j & j>1 \end{Bmatrix} \quad (2)$$

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

$$q_j = \begin{Bmatrix} 1 & j=1 \\ \dfrac{q_{j-1}}{k_j} & j>1 \end{Bmatrix}. \quad (3)$$

***Step* 5**. Determination of the relative weights of the estimated criteria by using the following Eq.:

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

where *wj* represents the relative weight of the criterion *j*.

Step 6. In the case of a larger number of decision-makers, the mean value is taken out of the account using the formula:

$$wj = \frac{\Sigma wj}{n} \quad (5)$$

When w_j* is the average value of w_j of decision-makers, n is the number of decision-makers.

Simplified PIPRECIA (PIPRECIA-S) method

In the PIPRECIA method, the value of *sj* is assigned based on a comparison of the significance of the evaluated criterion with the significance of the previous (j-1) criterion. While using the PIPRECIA method so far, some respondents stated that it would be easier for them to always make comparisons with the first criterion instead of the previous one. To enable this, one adaptation of the PIPRECIA method, named the Simplified PIPRECIA method, is proposed in this article. The change in the way of criteria comparisons was reflected in Eq. (1) and Eq. (3) so that the calculation procedure of the Simplified PIPRECIA method can be presented as follows:

Step 1. Determine the set of evaluation criteria.

Step 2. Set the relative significance s_j of each criterion, except the first, as follows:

$$= \begin{cases} >1 & if\ C_j > C_1 \\ 1 & if\ C_j = C_1 \\ <1 & if\ C_j < C_1, \end{cases} \quad (6) \text{ where } j \neq 1.$$

Similar to the PIPRECIA method, the value of s_1 is set to 1, while values of s_j belong to the interval (1, 1.9] when $C_j > C_1$,, that is to the interval [0.1, 1) when $C_j < C_1$.

Step 3. Calculate the value of coefficient k_j as follows:

$$k_j = \begin{cases} 1 & if\ j = 1 \\ 2 - s_j & if\ j > 1 \end{cases} \quad (7)$$

Step 4. Calculate the recalculated weight q_i as follows:

$$q_j = \begin{cases} 1 & if\ j = 1 \\ \frac{1}{k_j} & if\ j > 1 \end{cases} \quad (8)$$

Step 5. Determine the relative weights of the evaluation criteria as follows:

Research results and discussion

The purpose of this paper, as previously mentioned, is to identify the significance of elements and characteristics that suggest the significance of platforms for academic learning that incorporate artificial intelligence. This will be achieved through a group of decision-makers who, through scientific research, assess the previously mentioned platforms and the implementation of the method that will prioritize the most critical factors. Table 1 illustrates a variety of characteristics and attributes that are significant to academic learning platforms.

Table 1. Overview of various elements and characteristics of ResearchGate, Google Scholar, and Semantic Scholar

Elements		Characteristics	
Rg 1	ResearchGate	Rg_{11}	Interactive dashboards
		Rg_{12}	Intuitive profile creation
		Rg_{13}	Follower system, messaging
		Rg_{14}	Project and research group creation
		Rg_{15}	RG score, publication impact
		Rg_{16}	Free paper uploads, full-text access
		Rg_{17}	Engagement analytics, paper impact tracking
Gs 2	Google Scholar	Gs_{21}	Basic user interface
		Gs_{22}	Simple search functionality
		Gs_{23}	Citation alerts
		Gs_{24}	Public profile view
		Gs_{25}	Citation count, h-index
		Gs_{26}	Access to open-access papers
		Gs_{27}	Basic metrics, reference management tools
Ss 3	Semantic Scholar	Ss_{31}	User-friendly interface
		Ss_{32}	Semantic search features
		Ss_{33}	Connect with authors
		Ss_{34}	Recommendations for collaboration
		Ss_{35}	Citation contexts, influence metrics
		Ss_{36}	Full-text search, millions of papers
		Ss_{37}	AI-driven paper suggestions, citation graph analysis

Source: Author's research

To ensure the most dependable results, the decision-making process includes five decision-makers from various educational backgrounds: the first is a professor, then two doctoral students, the fourth is a primary researcher, and the fifth is a master's student. The significance of fundamental cognitive abilities will be determined by the formulas (1) – (6). Table 2 presents the obtained results.

Table 2. The relative importance of elements group

	D_{prof}	D_{phd}	D_{phd}	D_{rc}	D_{msc}	$Wj*$
Rg_1	0.38	0.37	0.34	0.39	0.35	0.36
Gs_2	0.35	0.30	0.29	0.35	0.37	0.33
Ss_3	0.27	0.34	0.35	0.26	0.27	0.30

Source: Author's research

Formula (5) was applied to calculate the mean value of the received weights to reduce the subjectivity of decision-makers and identify the most pertinent results. Gs_2 - Google Scholar is the most significant, while Ss_3 - Semantic Scholar is the least significant, according to the results obtained.

According to Table 1, it is apparent that each aspect has multiple elements. As a result, the next step of the study will be to determine the relative significance of these factors, as indicated in Tables 3–6.

Table 3. Weights of the platform ResearchGate

	D_{prof}	D_{phd}	D_{phd}	D_{rc}	D_{msc}	$Wj*$
$R_{g1}1$	0.08	0.12	0.13	0.13	0.08	0.11
Rg_{12}	0.12	0.12	0.13	0.13	0.12	0.12
Rg_{13}	0.12	0.12	0.11	0.10	0.12	0.11
Rg_{14}	0.14	0.14	0.13	0.12	0.14	0.13
Rg_{15}	0.15	0.14	0.14	0.12	0.15	0.14
Rg_{16}	0.17	0.17	0.16	0.15	0.17	0.16
Rg_{17}	0.22	0.21	0.18	0.24	0.22	0.21

Source: Author's research

From the results obtained, the most significant characteristic of the Research Gate platform is Rg_{17} - engagement analytics, which tracks the impact of papers. This feature is particularly important for individuals who participate in scientific research. The least significant characteristic, Rg_{11} - Interactive dashboards and Rg_{13} - Follower system, messaging.

Table 4. Weights of the platform Google Scholar

	D_{prof}	D_{phd}	D_{phd}	D_{rc}	D_{msc}	$Wj*$
Gs_{21}	0.15	0.16	0.14	0.14	0.16	0.15
Gs_{22}	0.15	0.12	0.14	0.13	0.13	0.13

Gs_{23}	0.15	0.12	0.12	0.13	0.10	0.12
Gs_{24}	0.15	0.13	0.14	0.13	0.13	0.14
Gs_{25}	0.12	0.13	0.14	0.14	0.13	0.13
Gs_{26}	0.12	0.15	0.15	0.16	0.15	0.15
Gs_{27}	0.14	0.19	0.19	0.18	0.19	0.18

Source: Author's research

The results indicate that the most significant characteristic of the Google Scholar platform is Gs_{27} - Basic metrics and reference management tools. The least significant characteristic is Gs_{23} - Citation Alerts.

Table 5. Weights of the platform Semantic Scholar

	D_{prof}	D_{phd}	D_{phd}	D_{rc}	D_{msc}	*Wj**
Ss_{31}	0.16	0.14	0.15	0.13	0.17	0.15
Ss_{32}	0.16	0.15	0.12	0.13	0.13	0.14
Ss_{33}	0.14	0.15	0.18	0.11	0.09	0.13
Ss_{34}	0.17	0.18	0.18	0.13	0.12	0.15
Ss_{35}	0.12	0.13	0.15	0.14	0.12	0.13
$S_{s3}6$	0.10	0.10	0.11	0.16	0.14	0.12
$Ss_{3}7$	0.14	0.15	0.12	0.18	0.23	0.16

Source: Author's research

The results indicate the most significant characteristic of the Semantic Scholar platform is Ss_{37} which includes AI-driven paper suggestions and citation graph analysis. This feature is especially significant for people who take part in scientific research since it allows them to contribute. The feature that is the least important is Ss_{36} which allows for full-text searches on millions of documents.

Conclusion

The results of this research demonstrate the significance of using multiple decision criteria (MCDM) approaches to assess artificial intelligence on academic platforms. The simplified PIPRECIA approach was utilized to acquire relevant findings that validate the importance of important characteristics and factors in the selection of ResearchGate, Google Scholar, and Semantic Scholar platforms. ResearchGate stands out for its engagement analytics and paper impact tracking, which are crucial for scholars seeking to track and improve their academic influence. The primary determinant of the ResearchGate platform's effectiveness is Rg17, a collection of engagement analytics that tracks the influence of publications. This knowledge is critical for scientists conducting research. The interactive interfaces and the messaging system for followers, Rg11 and Rg13, have minimal impact. Google Scholar's user-friendly interface and efficient search capabilities were the main factors that led to its recognition as the most prominent platform, as indicated by the significance assigned to different elements and criteria. The weights assigned to key characteristics determined Google Scholar as the most significant platform, with a weight of 0.33. The most crucial elements of the Google Scholar platform are the simplicity of its design and the effectiveness of its search functionality. The factor weights ranged from 0.12 to 0.19, with core metrics and reference management tools being the most influential ones. Semantic Scholar was assigned a weight of 0.30, which was the lowest of all the weights. Despite this, the Semantic Scholar Platform showed noticeable changes in the weight of its parts. The most important ones were Ss37 - AI-powered paper suggestions and citation graph analysis. Despite ranking as the least significant in the overall classification, Semantic Scholar shows promise by utilizing artificial intelligence to provide article suggestions and analyze citation graphs.

In summary, the methodology used demonstrated its usefulness and feasibility in this field's decision-making process. Future studies should concentrate on evaluating and rating certain influential elements. The study illustrates that the utilization of artificial intelligence on academic platforms significantly improves the effectiveness and pertinence of searching for scientific papers.

This research shows that the use of structured approaches, like PIPRECIA, can greatly improve and facilitate the decision-making process in academic research. In future research, it would be beneficial to broaden the evaluation to include additional academic platforms and tools. Furthermore, a more comprehensive analysis of individual factors and their associations with research success should be conducted.

The assessment criteria should be consistently checked and modified to guarantee their pertinence in a scientific research setting that is progressively evolving. Here is the suggested course of action for future work. By adopting this approach, the platforms will be capable of providing their customers with even better services, making it easier to find, analyze, and make use of scientific information efficiently.

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PERSPECTIVES OF THE DEVELOPMENT OF TOURISM IN THE MUNICIPALITY OF BEOČIN

Abstract

The municipality of Beočin is located in the northwest of the Republic of Serbia on the territory of AP Vojvodina. Territorially it belongs to the northern part of region of Srem, while administratively it belongs to the South-Bačka District. There are a total of nine settlements on the territory of the municipality, of which only the narrow municipal core can be classified as an urban unit, while the other settlements can be classified as rural settlements. On the territory of the municipality there are a large number of natural and social (anthropogenic) resources suitable for the development of tourism, which to some extent has been put to the function of development. In order to continue the development, it is necessary to follow the strategic principles and positive experiences of other municipalities that develop tourism. One of the principles on which development should be based is the principle of sustainability. The requirement to preserve the local rural environment and the local community must be correlated. The aim of the work is to present the potential for the development of tourism in the municipality of Beočin, starting from the natural and social resources that are present, as well as to indicate future strategic directions of development.

Key words: tourism, destination, rural area, resources.

JEL classification: M31, M37, Q12, Q13.

ПЕРСПЕКТИВЕ РАЗВОЈА ТУРИЗМА У ОПШТИНИ БЕОЧИН

Апстракт

Општина Беочин се налази на северозападу Републике Србије на територији АП Војводине. Територијално припада северном делу Срема, док административно припада Јужно-Бачком округу. На територији општине има укупно девет насеља, од чега само уже општинско језгро се може сврстати у урбану целину, док се остала насеља могу сврстати у сеоска насеља. На територији општине се налази велики број природних и друштвених (антропогених) ресурса погодних за развој туризма, који су донекле до сада били стављени у функцију развоја. Да би се наставио развој неопходно је

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следити стратешке принципе и позитивна искуства других општина које развијају туризам. Један од принципа на којима треба заснивати будући развој је принцип одрживости. Захтев за очувањем локалног руралног амбијента и локалне заједнице морају бити у корелацији. Циљ рада је да представи потенцијале за развој туризма у општини Беочин, полазећи од природних и друштвених ресурса који су приступни, као и да укаже на будуће стратешке правце развоја.

Кључне речи: туризам, дестинација, рурално подручје, ресурси.

Introduction

Bearing in mind the often publicly stated views that tourism represent one of the underutilized opportunities for the development of the Republic of Serbia, as well as the strategic determinations for the development of tourism in Serbia presented in the document "Strategy for development tourism in the Republic of Serbia for the period 2016-2025" , the focus of the author's research is on the municipality of Beočin, as potentially attractive for development tourism and not sufficiently valorised for all tourist resources that it possess.

In that sense, seeing tourist resources in the light of their practical valorisation is the starting point of the general strategy of tourism development, which as such is always the result of three basic strategies that each tourist destination has and which is emphasized by a large number of authors (Kotler, 2017, Parishant et al 2016; Bakić, O, 2005.): tourism market segmentation strategy, tourism product differentiation strategy and image profiling strategy.

Natural attractions of the destination Beočin

Based on the conducted desk/cabinet and field research in the period April - June 2024 and data available from the Beočin Tourist Organization and the municipal administration, it can be concluded that the natural attractiveness of the municipality of Beočin, significant for the development of tourism, is characterized by a high degree of attractiveness. They include:

- Danube River (European Corridor 7);
- „Fruška Gora“ National Park with its peculiarities;
- Good geographical and traffic position (location of the Municipality on the Danube River, close to the European Road Corridor 10, close to Novi Sad, a large urban and administrative center of region of AP Vojvodina and second largest city in the Republic of Serbia);
- Diversity of flora and fauna on the territory of the Municipality and in the immediate surroundings;
- Moderate-continental climate;
- Spatial diversity consisting of: the city core of the Municipality, the banks of the Danube River, the Fruška Gora National Park, and typical Vojvodina rural

ambient units on the territory of the whole Municipality).

They are undoubtedly a great potential for the development of tourism and as such provide the opportunity to exercise different:

- conveniences for stay and rehabilitation;
- conveniences for the development of different types of thematic tourism:
  - hunting tourism
  - fishing tourism;
  - excursion tourism (there is an attractive natural environment in the immediate vicinity of the city);
  - rural tourism;
  - wine tourism,
  - water sports (Danube River with the coast); etc.

Most of these resources are currently not used for tourism development or are in the very beginning of their tourism exploitation.

Social conveniences for development tourism

Until the beginning of the 2000s, to the tourism market was offered a uniform Serbian tourist product that was not adapted to the flexible tourist demand, i.e. an undifferentiated tourist product was offered that was not aimed at appropriate market segments, i.e. market niches. This practically means that social development was unfairly neglected, that is, it took place spontaneously. This kind of policy was for the most part conducted on the basis of the views of the global planning policy at the level of the then federation, according to which the republics of the former Yugoslavia that had access to the sea coast and mountain ski centers (those that had the conditions for the development of mass forms of tourism) were recognized as tourism prospective, while Serbia was seen primarily as a raw material-resource base. In case of AP Vojvodina, this means that it should has been used agricultural potentials which was the case with the municipality of Beočin.

On the basis of the carried out desk and field research, it can be concluded that in Beočin, minimal social conditions and prerequisites for the development of tourism have been created so far. This is the result of the fact that when it comes to this municipality, in the minds of people in the area of economic development and business, the cement factory was primarily, and the entire area of the municipality was considered in a certain way as the "appendix" of the large urban and administrative center of AP Vojvodina, which consists of the city Novi Sad. Nevertheless, despite the aforementioned weaknesses, social conditions have naturally been created in the municipality that can serve as a good starting point for the future development of tourism, i.e. there are anthropogenic resources that can be put to the function of tourism development. Based on the available data obtained from the Beočin Municipal Administration and the Beočin Tourist Organization, we can include in this kind of conditions suitable for development tourism:

- Castle of Count "Špicer" from 1898 or Beočin Castle which is its second name;
- Different cultural and historical monuments;
- Development of the economy, education, sports and other social activities, which would represent important potentials for the development of tourism.

- Contents related to the life and customs of the inhabitants;
- Multi-ethnicity - a large number of people of different nationalities live in Beočin, as well as in the entire area of AP Vojvodina;
- Folklore as a peculiarity and an integral part of the tradition of this area.

In the desire to tourist valorize all the social conditions of life as fully and successfully, a series of manifestations was established, i.e. different kind of events. Existing events (for example: "*Banoštor Grape Days*" which is traditionally held in the first half of September every year, "*Bazar of Wine, Handicrafts and Tambourines*" which is traditionally organized during February, etc.) must be entirely set up on a marketing basis, in order to achieved full effect and had a long-term impact on the creation of the destination's image and its successful positioning on the tourist market.

According to the data of the Municipal Administration in 2024, the organization and management of tourism takes place in such a way that it is managed by the Municipal Secretariat for the Economy, the Tourist Organization of Beočin, as well as various branch of professional associations, i.e. there is no central organization that manages tourism development, as it is prescribed by the World Tourism Organization (UNWTO, 2007) in the Document "A Practical Guide to Tourism Destination Management". Namely, this document suggests the formation of Destination Management Organizations.

Tourist movements

Taking into account the current tourist demand as well as the supply, it can be concluded that Beočin can currently meet the needs of the tourist market. The volume and dynamics of tourist movements in the last five years are shown in table 1.

Table 1. *Movement of tourists on the territory of the municipality of Beočin in the period from 2018 to 2022.*

Year	Tourists			Overnight stays of tourists			Average number overnight stays of tourists[1]	
	Total	Domestic	Foreign	Total	Domestic	Foreign	Domestic	Foreign
2018	1.889	1.434	455	5.367	3.145	2.222	2,2	4,9
2019	1876	1477	399	4721	3142	1579	2,1	4,0
2020	881	807	74	2.013	1.702	311	2,1	4,2
2021	1.046	971	75	2.969	2.704	265	2,8	3,5
2022	2.315	2.002	313	9.169	7.310	1.859	3,7	5,9

Source: Publication "Municipalities and Regions in the Republic of Serbia" Statistical Office of the Republic of Serbia for the period 2019, 2020, 2021, 2022, 2023.

Note: The average number of overnight stays by tourists is calculated by dividing the number of overnight stays by the number of tourists. Since the tourist registers in every place where he stays, in the event of a change of place, he/she must be re-registered, i.e. duplicated. Therefore, probably, the average number of overnight stays of tourists, calculated in this way, is lower than the real one.

The data presented in Table 1 clearly shows the negative impact of the presence of the "COVID - 19" virus, which caused a drop in tourist traffic, as well as a re-growth after the end of the pandemic.

Bearing in mind that we want to improve the development of tourism in the coming period, it must be invested in improving the quality of accommodation facilities, because the quantity currently meets the needs of the market. This attitude stems from the growing demand for increasing the quality of accommodation facilities and the services provided in them, which are a prerequisite for the growth and development of tourist traffic.

Accommodation capacities of the municipality of Beočin with special reference to the accommodation capacities of rural tourism

The "Center for Economic Technological Development - CEPTOR", located on one of the peaks of the Fruška Gora National Park named "Andrevlje", stands out as the largest tourist accommodation capacity in the area of the municipality of Beočin. The center is primarily intended for the purpose of developing congress tourism. It has 4 (four) conference rooms:

- Hall "President" has 16 seats;
- Hall "Board" has 12 seats;
- Hall "Smart" has 25 seats and
- The hall "Atrium" is the largest with 120 seats.

The owners and architects planned it for mini-conferences and various types of gatherings and meetings. The facility has 31 rooms with 55 beds. Of these, 11 single rooms, 10 double rooms and 3 rooms with double beds (http://ceptor-andrevlje.rs/index.html accessed: July 30th, 2024).

In addition to this facility, there are a large number of other accommodation facilities on the territory of the municipality, which according to the Characteristics and criteria given by the UN FAO (2004) and UN WTO (2017) can be classified in the activity of rural tourism. A detailed description of these accommodation facilities is given in Table 2.

Table 2. *Accommodation capacities of rural tourism in the municipality of Beočin in July 2024.*

Name	Description
Eco-ethno club „*Сеоска прича*" ("*Country Tale*")	Located in the village of Cerević. It has 15 rooms and 30 beds. Within the building, there are also family apartments that can accommodate up to 4 people. Part of the accommodation is hostel type. The facility also has a wine cellar, which favors the development of wine tourism, the development of which is complementary to the development of rural tourism (https://www.seoskiturizam-dunav-fruskagora.com/ accessed: July 30th, 2024).
Village tourist household „*Опор*".	Located in the village of Banoštor. It has 3 apartments. The first two apartments have the capacity to host 4 people, each apartment individually, (8 people in total) The third apartment has the capacity to host 6 people (https://mojabaza.com/apartmani-olor-banostor/ accessed: July 30th, 2024).

Village tourist household „*Stojković*“	Located in the village of Banoštor. It has 2 rooms with bathrooms. It is a classic rural tourism accommodation with local ethnic, cultural and culinary specialties.
Village tourist household „*Etno budžak*“ ("Ethno a secluded corner")	Located in the village of Čerević. It has 1 apartment for 4 people and 1 double room. The offer is a classic offer of rural tourism with specialties of local cuisine.
Log cabin „*Зелена оаза*“ "Green Oasis"	Located by the river Danube in the village of Banoštor. It offers accommodation of high quality services for 4 people. The emphasis is on tourists who are determined and interested in fishing on the Danube.
Mountain house „*Звук тишине*“ ("*The Sound of Silence*")	Located at the entrance to the Fruška Gora National Park, in the immediate vicinity of the BeočinMonastery. It has 2 bedrooms, living room, kitchen, bathroom. Construction type mountain house "Golija". Cover area 93m^2.
Villa „*Salaksije Holiday House*“	Located in the village of Susek on the slopes of Fruška Gora. It has 4 bedrooms, a large living room, 2 bathrooms, a kitchen and a large yard.
Restaurant with lodging "*Karaš*"	Located on the Beočin beach on the Danube River. The restaurant has 3 halls with a capacity of up to 300 people. There are 1 double and 4 single rooms in the facility.
Local food restaurant with lodging „*Бели чин*“ ("*White Rank*")	Located on the monastery road to the Beočin monastery.

***Source*:** Tourist organization of Beočin, Tourist organization of Vojvodina.

As can be seen from the above-mentioned accommodation facilities offered by rural tourism, the village of Banoštor leads the way in terms of their number.

Village Banoštor is a famous wine destination with excellent wine cellars, attractive areas for cycling, famous Fruškogora monasteries and excellent fishing grounds on the Danube River.

Directions for intensifying tourism development

Based on the results of the cabinet research of the previously made strategy of development the municipality of Beočin(document: "Strategy of sustainable development of the municipality of Beočin 2013-2022"), as well as the field research conducted in the period May - July 2024, it can be concluded that the municipality of Beočin possesses quality resources for development tourism.

From the conducted analysis, general and individual goals and directions for intensifying the future strategic development of tourism can be identified and defined. The most important general strategic goals and directions could be:

- Organizational improvements at the level of the entire tourist destination. This primarily meant business networking of all stakeholders from the public and private sector. The UNWTO (2007) proposed the formation of Destination Management Organizations (DMOs) or similar organizations or associations, depending on the achievement of a consensus of the interests of the public and private sectors in the field of tourism;
- Intensification of overall development through fuller use of existing and construction of necessary new tourist capacities;
- Improvement of all conditions for the development of domestic tourism;
- Faster planned exit of the destination to the international market;
- Establishing an economic environment, this as an imperative and economic motive, will have continuous investments and improvements in the field of tourism.

General strategic goals and directions for the intensification of tourism development can, if practically implemented, provide long-term effects and enrich the tourist offer as a whole. In order to achieve these general directions and goals of the strategic development of the destination, it is necessary to fulfill the corresponding assumptions and conditions.

Based on research conducted by the Institute for Agricultural Economics in the field in the period May - July 2024, as well as data obtained from the Beočin Municipal Administration and the Tourism Organization of Beočin, i.e. conducted cabinet research, the tourist destination of Beočin viewed from the aspect of natural and social resources in order to create appropriate conditions for the development of tourism, it must make appropriate investments in the tourist infrastructure. In this way, the prerequisites for the development of certain types of thematic tourism would be created. In that sense, as individual, (partial) goals and directions of future development, they should include:

1) Greater orientation towards the construction of attractive accommodation capacities. There is not a single hotel or motel in the true sense of the meaning of those words in the urban centre of the municipality of Beočin. The absence of accommodation capacity means the absence of a base for the development of tourism, which makes any further planning of its development pointless. Therefore, this is the first priority if Beocin really wants to invest in the development of tourism and expects effects based on the investment. The accommodation capacities of rural tourism that have already been mentioned (village tourist households, ethnic houses, mountain houses, etc.) have developed spontaneously in places (most often the villages of Banoštor and Čerević) where there are conditions for the development of rural tourism. According to the data of the Tourist Organization of Beočin, some of these facilities are categorized, while some do not meet the requirements for categorization.

2) Investing in restaurant-type catering facilities and promoting the tradition of the rich local Vojvodina cuisine and its specialties in promotional activities. Hospitality establishments give a special "stamp" to each destination and represent one of its basic specific tourist features. Based on the data obtained from the Municipal Administration of Beočin, the following stand out as significant:

- Restaurant "*Karaš*" is categorized with three stars. Located on the bank of the Danube (at the beach), it is the only larger restaurant in Beočin. The restaurant has three halls with 80 tables that can accommodate 300 guests. It also has a summer garden with a capacity of 300 seats, so it is suitable for holding various ceremonies. The restaurant also has its own beach with a capacity of 5,000 people. (https://www.restorankarasbeocin.rs/onama.html accessed: 10th august 2024);
- Restaurant "*Athos - Koruška* ". It is about the restaurant vidikovac located on the road from Beočin towards the state border with the Republic of Croatia, at the intersection of state roads number 116 leading to Ilok and number 125, towards Sremska Mitrovica. The newest catering establishment in the area of Beočin municipality is located on the Fruškogorska wine road between the villages of Banoštor and Susek in the well-known weekend resort of Koruška. The closed part of the restaurant can accommodate 50 guests, while the beautiful terrace, which offers a magnificent view of the Danube, can accommodate 100 guests. The specialties of the restaurant are dishes from the Srem area. The building has eight double and triple rooms as well as an outdoor swimming pool. (https://turizambeocin.com/blog/restorani-beocin/ , accessed: 10th august 2024);
- Restored "*White rank*". It is located on the left side of the road, when you leave Beočin for the Beočin monastery. The restaurant is more recent and is furnished in ethnic style. Its capacity is about 80 guests. (https://turizambeocin.com/blog/restorani-beocin/ , accessed: 10th august 2024).

Here we criticize the quantity and quality of hospitality services at the level of the entire municipality, because they are currently at a low level, which must necessarily change with the development of tourism. When it comes to catering, Beočin can look for its chance in the rich Vojvodina cuisine and traditional specialties, given the trends in the world market that the concept of healthy food is gaining more and more importance, as well as escaping from the uniformity of "Western cuisine". An important suggestion for the future development of the hospitality industry is that some of the group of restaurant chains (domestic or foreign), through the franchising system of business, can visibly enrich the tourist offer of the destination, offering traditional specialties. It would also be an example for other tourist destinations in our country, given the richness and diversity of our national cuisine.

3) Modernization of existing and building of specialized shopping facilities, chains and supermarkets. The construction of one or more large markets from one of the well-known trade chains that already operate on the domestic market would certainly enrich the tourist offer. Despite the relatively good supply, this is a necessary step in enriching the tourist offer, which makes the destination more attractive for tourists.

4) Arrangement and adaptation of Count Spitzer's castle from 1898 to the needs of tourism. The castle of the Spitzer family, former co-owner of the Beočin cement factory, is one of the oldest cultural monuments in the municipality of Beočin, which is under state protection. In the opinion of the expert service, among the

numerous castles in AP Vojvodina, this one stands out as a unique example of secessionism, the predominant style in European architecture. Apart from the roof, which is largely preserved and partly protected from further deterioration, nothing else was done. The project of this once magnificent building exists, and with its realization, it is certain that Beočin would be adequately positioned on the tourist market of Vojvodina and Serbia as a whole, and this would visibly enrich the tourist offer of Beočin. The suggestion is that it is necessary to: organize professional services, guides for visits, etc. Castles in the immediate vicinity can be taken as an example, such as the castles of the Dundjerski family in Bečej or castles in Hungary, Austria, Romania, etc. (data of the Municipal Administration of Beočin and https://www.dvorcisrbije.rs/vojvodina/ accessed: 10th august 2024.)

5) The building and arrange construction of a complete tourist infrastructure on the banks of the Danube River implies:
   - Construction of marinas, with all accompanying facilities. On the initiative of the Provincial Secretariat for Economy, Sector for Trade, Tourism and Services, a Study of the network of marinas on the Danube River in AP Vojvodina was carried out. On the basis of that Study, it was proposed to build three marinas on the territory of the municipality of Beočin. A marina with 100 moorings in Beočin was proposed for the primary macrolocation, Banoštor for a secondary macrolocation with 50 moorings and a location in Čerevic was proposed for a tertiary macrolocation with 50 moorings. In order to move towards the implementation of the next step, it is necessary to prepare a detailed regulation plan for the proposed marinas in the municipality of Beočin.
   - Organizing the so-called river taxi transport to Novi Sad, Futog, a tour of the Beočinska ada (the "island of love" as it is popularly called by the people of Beočin) and the like.
   - Construction of a larger number of restaurant-type catering establishments on the Danube River that would promote local food specialties, as well as local culture and content related to folklore - the development of food tourism.
   - Considering the rich fish stocks of the Danube River, there is a possibility of building a fishing ethno-village with typical fish farms. Bearing in mind the fact that this requires large investments, one must take into account the economic effects, i.e. the constancy in tourist demand over a longer period of time, which would practically justify the investments. An important role in this would be the promotion policy, as well as the possibility of entrusting this work to a private investor. It should be emphasized that in this, all urban conditions must be clearly prescribed and respected, which must be in accordance with the principles of sustainable development.
   - Arrangement of the swimming pool with all accompanying facilities. Beocin has one of the most beautiful sandy beaches. It is located right next to the restaurant "Karaš" near Beočinska ada. It is necessary to build content that would keep the visitor to spend the whole day in this part of

Beočin. This primarily refers to sports-recreational activities, for which it is necessary to build suitable sports-recreational fields for: football, basketball, volleyball, beach-volleyball, tennis, etc. Also, it is necessary to build facilities related to the stay of children in this area, such as, for example, a children's playground, etc.). For better accessibility of this locality, it is necessary to buy the so-called A small tourist train for transportation from the center of Beocin to the city beach, which would make the location more accessible for visitors.

- Construction of a camp in the "Dunav" settlement. The area next to the city beach has possibilities for building a camp, which would enrich the accommodation offer of the Beočin municipality.

Perspectives for the development of thematic types of tourism

Rural tourism. Arrangement and adaptation of numerous rural ambient units to the needs of tourism is one of the priorities facing the Municipality. Agriculture has far-reaching interests in complementary cooperation with all sectors of the economy, including tourism. As the conducted research has shown, as a small number of inhabitants of the municipality are engaged in agriculture as a basic activity, there is already a large number of households that are ready to engage in rural tourism. One of the ideas that would contribute to the positioning of Beočin on the tourist map of rural tourism in region of AP Vojvodina and building its image as a potentially attractive tourist destination is the arrangement of an ethno-house that would present all the anthropogenic values of this area.

Recently, in the "West" there is a great interest for this type of tourist offer. Ethnio - households, which would deal with the presentation of contents related to the life and work of the locals, often long forgotten and abandoned, attract a lot of attention from tourists. It would certainly complete the tourist offer, and for people from highly urbanized industrial centers it would represent a special tourist attraction.

In the village of Banoštor there is a house that has all the features of the ethnio-style that is typical for this area and whose owners are ready to further adapt and reconstruct it. The presentation of old tools, folk handicrafts, the engagement of people who would be ready to demonstrate long-abandoned crafts would certainly enrich the program of a stay in the countryside. If we add to this the already famous "Banoštor Grape Days" event, the program of staying at this micro-destination would be complete.

Adequately built vacation homes in nature, characterized by peace and quiet, are true "oasis" for people from highly urbanized, industrial centers. The basic prerequisites that should be provided for the successful development of this specific type of tourism are as follows:

- professional selection of the exact number of households that would be engaged in rural tourism, with a clear specification of all the conditions (standards) that the household would have to fulfill in order to be able to engage in tourism;
- education of the local population to provide the appropriate level and quality of tourist services is the assumption (basis) for future development; this is closely related to the formation of a tourist organization, which must play a

major (decisive) role in this; other state and professional organizations must also play an important role;
- the creation of a quality program of stay in the countryside must not be left to local resourcefulness, it must be a serious subject of analysis at all levels, if development and effects from this type of tourism are expected;
- defining urban conditions for the development of rural tourism, both by state and local authorities (Municipalities and Local communities).

Wine tourism. Given that the area of the Municipality has ideal conditions for the cultivation of some types of fruit, tourism based on them could be developed as one of the specific types of rural tourism. Here we suggest the development of wine tourism. Regions characterized by the cultivation of vines and the production of wine record significant income from numerous tourists who want to attend numerous events held in honor of wine during the harvest. Revenues are generated both from the sale and consumption of wine, as well as from all expenses incurred by tourists during their stay at a given destination. There are approximately 450 ha of vineyards in the municipality of Beočin. The most famous winemakers are from the villages of Banoštor, Čerević and Susek. The association of winemakers "St. Trifun" has 28 members, and the most famous among them are: Milan Šijački, Jovan Stojković, Petar Silbaški, and Jovica Ačanski.Wines from Fruška Gora are widely known, and it is a well-known fact that today in Vienna there is a protected the name of the Ruzica wine, the far-famed "*Karlovački tovjan*". Among all Srem wines, the Fruškogorsk wines made from dried grapes (suska), especially black ones, have gained a special reputation. The famous "ausbruch" (lone stream) "Cyprus wine", "bermet kapljaš" (tropfwermut) and "pelenaš", ordinary bermet, were made from these grapes. The production of numerous varieties for which there are objectively all the necessary natural conditions on Fruška Gora, as well as numerous wine cellars, are the potential and resource that the destination has and which, if the already existing event "Banoštorsk grape days" is well thought out in terms of promotion, i.e. marketing and culture, can attract a significant number of tourists, both from the country and from abroad. This would be an example of a direct form of tourism cooperation with other economic branches (agriculture, trade, etc.), which would achieve a positive multiplied effect of tourism on the overall economy and its development.

Monastery tourism. Arrangement and adaptation of religious facilities to the needs of tourism. The most famous among them are certainly the Beočin and Rakovac monasteries.

- When it comes to the Beočin monastery, there are no written traces about who founded the monastery. The monastery was destroyed several times. Until the Second World War, the monastery had a rich treasury with many valuables, icons and paintings. Despite the fact that it was completely looted, the monastery remained undamaged during the war. The monastery was built in a mixture of traditional Byzantine-Serbian motifs and a mixture of various directions, which is the result of the fact that the masters were from different parts of Europe. Icons were made by numerous icon painters Janko Halkozović, Maksim Petrović, Dimitrije Bačević, Teodor Dimitrijević.
- Rakovac Monastery was founded by Raka Milošević, the great chamberlain of despot Jovan Branković at the end of the 15th century. During the Second World

War, the monastery was burned down. The burned iconostasis was the work of the famous painter Vasilij Ostojić from 1763.

It should be noted here that the consent of the Serbian Orthodox Church is necessary for the development of the religious type of tourism, i.e. the harmonization of the ways, rules and regulations of tourist visits with religious rules, principles - canons of behaviour. A good example is the countries in the immediate vicinity (Greece, Bulgaria, Russia, etc.). Organizing a professional service, guides for visits, supporting infrastructure that does not disturb the ambient whole, are just some of the rules that must be followed.

Hunting tourism and photo safari. The hunting organization has a long tradition and developed cooperation with numerous domestic and foreign hunting organizations. The organization of hunting tourism is a delicate business, as it requires strict rules of conduct, with compliance with strict legal regulations, both for domestic and international users of hunting grounds. In order to use this natural potential, as a task facing the Municipality, the following should be regulated: transportation to the hunting grounds, provision of permits for weapons and ammunition, construction of feedlots and checks, construction of a hunting lodge, as well as specialized hunting accommodation and catering facilities. One of the traditional hunting events is the "*jackal hunt*", which is held every year, traditionally every first Saturday in February, organized by hunting associations: „Srndać" (Roe Dear) from Beočin, as well as hunting associations from the village of Banoštor and village of Čerević. Associations cooperate with numerous hunting associations from the country and abroad.

Fishing tourism. Breeding of noble species of fish, their nutrition, with a clear specification of the place for hunting and fishing, the time of permitted hunting of certain species, as well as their legal protection (with regard to spawning, etc.), can be organized in a similar way as for hunting. Today, there is already a manifestation "Youth Cup in Fishing", which is one of the biggest manifestations when it comes to fishing in the municipality of Beočin.

Free-climbing. There are fields on Fruška Gora that could be used for this specific and attractive type of sport. With minimal investments, the stay program at the destination would be enriched.

Moto cross track. One of the suggestions is the construction of a motocross track on Fruška Gora. Expansion of motorcycles, the lack of adequate space for motorcycling enthusiasts can be a serious project that would help profile the image of Beočin as a tourist destination. In this way, numerous tourists could be attracted both from the country and from abroad. One should be careful here, considering that Fruška Gora is one of the five national parks in the territory of the Republic of Serbia and strict legal regulations on sustainable tourism development must be observed.

Excursion tourism. There are numerous picnic spots on Fruška Gora, which certainly include the most famous "Andrevlje", "Osovlje", "Zmajevac", "Testera", as well as a tour of the "Sviloška Klisura" with a waterfall, which is certainly a natural rarity of Fruška Gora that must be valorized as a tourist. It is necessary to equip these localities with infrastructure in order to enable visitors to stay all day.

Events (manifestations). On this way, the program of staying at the destination is completed and enables its positioning on the tourist market. The list of existing manifestations/ events is given in table 3.

Table 3. *Manifestations/events on the area of the municipality of Beočin.*

No.	Name of manifestation/ event	Description
1.	**Jackal hunting**	The event is held on the first Saturday in February, organized by the Hunting Association "Srndać" (roe deer) from Beočin and hunting societies from village of Čerević and village of Banoštor. The event is included in the Calendar of the Hunting Association and has been organized for ten years. The municipality of Beočin is the sponsor of this large gathering of hunters.
2.	**Cup of youth in fishing**	One of the biggest events when it comes to fishing in the municipality of Beočin, takes place in the first half of May (depending on the water level). It is an international competition.
3.	**Banoštor grape days**	A traditional event that has been held since 1997. The event takes place on the second weekend in September and lasts for three days. The organizer of the gathering of winemakers is the Banoštor Municipal Community and the "St. Trifun" Winegrowers and Winemakers' Club from Banoštor, while the patron is the municipality of Beočin.
4.	**The Golden Cauldron of the Danube**	A traditional manifestation that is organized during July in the immediate vicinity of the "Karaš" restaurant in Beocin. The event has the character of qualifications for the International Golden Cauldron, which is traditionally held during the International Fair of Hunting, Fishing, Sports and Tourism in Novi Sad.
5.	**Wine, handicraft and tambourine bazaar**	The event is held at the Center for Culture, Sports and Tourism of Beočin in cooperation with winemakers, wineries, as well as women's associations and numerous tambura orchestras that exist in Beočin. It is traditionally organized on February 13, which coincides with the feast of Saint Tryphon.
6.	**Čerević in May**	The event takes place throughout the month of May, and it is traditionally celebrated when the "Night of the Museum" event is celebrated throughout all around of the Republic of Serbia. In addition to Municipality administration of Beočin, the women's association "My village" is also the organizer.
7.	**Days of the Danube River**	The event takes place in the month of June, and the organizer is the Local Community of Banoštor. The program of this event is dedicated to educating the youngest population about the needs of preserving the ecological system of the Danube River.
8.	**Beoleto**	The event is held at the Center for Culture, Sports and Tourism. The task of the event is to enrich the cultural and entertainment life in the municipality of Beočin during the summer months.
9.	**Echoes of White Maidan**	The event is held in the village of Rakovac. At this event, folk handicrafts, works of art, agricultural products, as well as a food preparation competition are presented, local specialties. The event is accompanied by rich artistic and folklore content.

10.	**Manifestation** **„ ... But it used to be good to eat ....“** **„Ал се некад добро јело баш.“**	The event is held in the village of Rakovac in the House of Culture. The festival was designed to preserve the tradition, culture, and customs of the region represented by exhibitors from about 30 places in Vojvodina, presented through women's creativity. The preparation of specialties on the spot with plenty of old-fashioned cakes and the sounds of the tambourine give a special charm to the event and is fun for the whole family and a real delight for hedonists. The event has been held since 2011 and gathers a large number of snack lovers.
11.	**Exhibition "Orthodoxy on the Internet"**	The event is held in the village of Beočin, and the organizer is the Society of Photography, Film and Video Lovers "BEOFOTO" Beočin. Thanks to the Internet, this unique cultural event, which presents photos of Orthodox content from all over the world, brings together a large number of authors. The sponsor of the exhibition is the Municipality of Beočin, and the organizer is the "Beofoto" Beočin Association of Photography, Film and Video Enthusiasts.
12.	**„Winter Fest“ outdoor**	The event is held at the Center for Culture, Sports and Tourism of the Municipality of Beočin. It was conceived as a winter festival that takes place on Beočin Square near the sports center. Various programs complement and enhance the festive atmosphere.

Source: Tourist organization Beočin (https://turizambeocin.com/blog/манифестације-у-општини-беочин/ accessed: 3rd avgust 2024), Beočin Municipal administration July 2024.

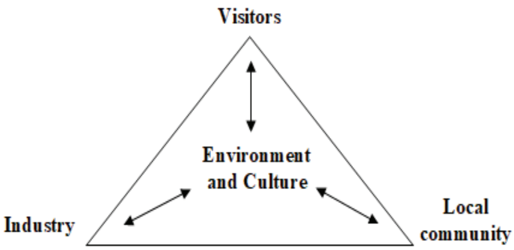
Characteristic of sustainable development rural tourism

The conditions for sustainable development of tourism and the improvement of the offer through the simultaneous policy of preservation and protection of space and the environment represent an imperative that must be consistently respected in plans for future tourism development.

International organizations that monitor the development of rural tourism (UNWTO, UNFAO, OECD, EuroGites), as well as numerous authors in professional literature (Lane, 2024, Eusebio et al 2014, etc.), have a consensus that rural tourism is not massive in character and scope, but small and of low intensity. It’s about “exclusive tourist small markets” focused on trips to mini-tourist destinations such as villages, rural households, etc. The offer of rural tourism is something different, specifically related to the rural area and the rural way of life.

The development of rural tourism must be in accordance with the principles of preserving the rural environment, because tourists come to the rural area in order to experience and feel the rural environment and the rural way of life in the original sense of the meaning of those words. Therefore, it is in the interest of the development of rural tourism to preserve the authentic rural area with all its peculiarities. This is practically stated in the Encyclopedia of Tourism (2016) when it is said that the rural area represents the basis on which its development rests and is based.

This is in accordance with the principles promoted by the UNWTO in 2007 in the document "A Practical Guide to Tourism Destination Management" (p. 12) in which it promoted the VICE model (Figure 1). This model actually represents the mutual interaction between three important elements in a tourist destination, namely the visitors, the local industry that is responsible for satisfying tourists during their visit, and the local community in which this exchange takes place.



Source: UNWTO (2007), A Practical Guide to Tourism Destination Management, p.12.

Bearing in mind reach natural and anthropogenic resources that Municipality of Beočin possess and fact that only settlement Beočin has urban character it is very important to implement and lead all principles of sustainable rural tourism development which UNWTO suggested and insist.

Rural tourism is now in first stage of development which main characteristic is that it is developing without any serious planning. To get across in second phase of development well known as phase of dedicated development where state must invest on its development, it is important that all stakeholders must doing its rural tourism business in accordance with approach on which UNWTO insist. On that way it can be protected all natural and social (anthropogenic) resources of this area.

If we accept the views on the phased development of rural tourism discussed by Zodorov (2009), and based on the conducted research, it is clear that rural tourism in the municipality of Beočin is in the initial phase of development, i.e. that until now it has developed spontaneously without a clear plan. In order to enter a higher phase of "local development" characterized by investments in its development, i.e. when the Municipality, the state and local stakeholders must invest in its development, it is clear that one must insist on the approach insisted on by UNWTO (2007) as its development would not take place to the detriment of the destination itself.

Conclusion

The municipality of Beočin has respectable resources for the development of tourism. Hence, these evidently present resources must be put into the function of development. All the more, tourism must become a factor in its further overall development, especially if we take into account its multiplied effect on the economy. The biggest part of attractiveness has yet to be included in the further development plans and programs of the Municipality, and then in all modern tourist and economic flows in the country. With the inclusion of numerous economic activities, Beočin can become a factor in the stabilization and growth of overall economic activities in the area of Vojvodina in a long period of time. Selective, market-oriented, properly coordinated, strategic development of the entire destination should play an important role in all of this. In this way, the positive results that should be, and are imperative for tourism and overall economic development, are realistic and achievable.

In the following years, it is necessary to seriously approach the positioning of Beočin as a tourist destination on the tourist market. In this respect, one of the priority tasks facing both the Municipal Tourism Organization on the one hand, and all the factors of the tourist offer on the other hand, would be to work on image building. Building an image would enable easier positioning in potential markets, which would certainly attract the attention of potential tourists (targeted market groups) to Beočin.

Another important task is the complementary development of domestic and international tourism. In the short term, Beočin is not able to put all its potentials into the tourist function. This means that it cannot create a large number of competitive tourism products at once. The strategic positioning and branding of Beočin as a tourist destination must, therefore, arouse interest in traveling to it on the basis of only a certain number of products that are already almost ready, or can be prepared for commercialization (domestic and international) in a very short time. The selection is in the hands of the management of the tourist destination and their valid assessment of the products and the steps for their market exploitation. These are products such as:

- *Tourism of the special interests, thematic tourism*. The wealth of natural and anthropogenic elements in the entire destination offers great opportunities for tourism commercialization. These are: hunting, fishing, excursion and recreational tourism, as well as a visit to Count Spitzer's castle from 1898.
- *Rural tourism* for which there are objectively good foundations and where, with minimal investments and adaptation time, commercialization can be started.
- *Transit tourism.* The geographical position and importance of the road leaders that pass through Beočin (Corridor 7 - the Danube River and the transit route to Croatia) are a good basis for positioning and further planning.
- *Tourism on the Danube River.* The location of Beočin on the river is a great and for now untapped potential. With small investments, it would represent one of the basic tourist products of the destination.
- *Events*. A good example is the "Banoštor Grape Days" event, as well as numerous others that have already been discussed.

The request is, therefore, to ensure the promotion and sale of "quick win" products by initially building awareness of Beočin as a tourist destination, and to simultaneously ensure the creation of awareness of other strategic values and attractions on which other relevant products will then be formed.

Future tourism development as an imperative imposes the construction of accommodation (receptive) capacities, this implies investment in this area, but also the application of all standards and technical-technological innovations related to the field of tourism, which must be taken into account, bearing in mind the growing requests of demand, as and the overall condition of accommodation facilities in the entire destination.

Considering all the mentioned factors, tourism should be developed through combined programs that would include Beočin as part of the Danube Region. It is necessary to create specialized programs by demand segments depending on the targeted market groups. Programs must be elaborated in detail from the process of promotion, propaganda, reservations, sales, transportation (traffic), all activities related to accommodation and stay at the destination, until the return. Price policy and quality relations with tour operators are a guarantee of success.

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SUSTAINABLE DEVELOPMENT OF URBAN TOURISM IN KRAGUJEVAC [2]

Abstract

The development of tourism in cities in recent years has increasingly led to negative ecological, socio-cultural, and economic effects. Cities in Serbia are facing the same issues, and therefore must plan their tourism development according to the principles of sustainable development in order to reduce the negative impact of tourism. Market research is crucial for planning strategies for sustainable urban tourism development. This scientific work highlights the importance of market research for the sustainable development of tourism in Kragujevac, with a focus on the identification of key elements that contribute to the improvement of city tourism. A survey conducted among 302 respondents during June and July 2023 collected data on demographics, motivation for visiting, satisfaction with the offerings, and perceptions of the ecological and social aspects of tourism. The results show that tourists are most attracted to cultural and historical landmarks, events, natural beauty, and gastronomic offerings. The research revealed challenges in the sustainable use of natural and cultural resources, which requires further consideration to enhance tourism development. Strategies that support environmentally friendly practices, such as using renewable energy sources and promoting eco-tourism, along with improving tourists' awareness of sustainable practices, are recommended.

Key words: *Market Research, Sustainable Development, Urban Tourism, Tourist product, Kragujevac.*

JEL classification: *Z32, Q01, Q56*

ОДРЖИВИ РАЗВОЈ ГРАДСКОГ ТУРИЗМА У КРАГУЈЕВЦУ

Апстракт

Развој туризма у градовима последњих година све више доводи до негативних еколошких, социо-културних и економских ефеката. Градови у Србији

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суочени су са истим проблемима стога морају планирати свој туристички развој према принципима концепта одрживог развоја како би смањили негативан утицај туризма. Истраживање туристичког тржишта кључно је за планирање стратегија одрживог развоја градског туризма. Овај научни рад истиче важност тржишног истраживања за одрживи развој туризма у Крагујевцу, с фокусом на идентификацију кључних елемената који доприносе унапређењу градског туризма. Анкетом, спроведеном међу 302 испитаника током јуна и јула 2023. године, прикупљени су подаци о демографији, мотивацији за посету, задовољству понудом и перцепцији еколошких и друштвених аспеката туризма. Резултати показују да туристе највише привлаче културно-историјске знаменитости, догађаји, природне лепоте и гастрономска понуда. Истраживање је открило изазове у одрживом коришћењу природних и културних ресурса, што захтева даље разматрање како би се унапредио развој туризма. Препоручују се стратегије које подржавају еколошки прихватљиве праксе, попут коришћења обновљивих извора енергије и промоције екотуризма, уз унапређење информисаности туриста о одрживим праксама.

Кључне речи: *Истраживање тржишта, Одрживи развој, Градски туризам, Туристички производ, Крагујевац.*

Introduction

Tourism market research is a crucial element for the successful sustainable development of urban tourism, particularly in the context of cities like Kragujevac. In today's globalized tourism environment, where competition among destinations is continuously intensifying, precisely understanding the needs and preferences of tourists becomes critically important for optimizing tourism offers and services. Kragujevac, as a significant urban canter in Serbia with a rich history and cultural heritage, faces challenges in maintaining a balance between increased tourism activity and the preservation of local resources and identity. In this context, market research not only helps in identifying current tourism trends but also in developing strategies that enable cities like Kragujevac to attract and satisfy visitors while preserving their unique characteristics. Analysing tourist preferences and behavior facilitates the creation of targeted marketing campaigns and the enhancement of infrastructure and services in line with sustainable development principles. Additionally, research reveals opportunities for improving local communities and economies through the development of sustainable tourism initiatives that provide long-term benefits for the city. In this sense, continuously monitoring and adjusting strategies based on market research results is crucial to ensure that tourism in Kragujevac contributes not only to economic development but also to the preservation of its cultural and ecological heritage.

Literature review

The concept of sustainable development has quickly become common in numerous global discussions (Brdulak, & Stec, 2024, 77). This term is used in various contexts, including the economy, nature, and society (Voronina et al., 2024, 7). Sustainable development is closely linked to the way we value environmental resources and to many ethical principles that arise from it. The adoption of sustainable development principles encourages people to think about the following: the quality of the environment for optimal living, the availability of resources in the future, the state of the environment for future generations, and social well-being (Stojanović, 2023, 26).

The concept of sustainable development was first mentioned in 1980 in the World Conservation Strategy, published by the International Union for Conservation of Nature (IUCN), in collaboration with the United Nations Environment Programme (UNEP) and the World Wide Fund for Nature (WWF). The goal of the strategy was to achieve sustainable development through the conservation of living resources, combining scientific-theoretical and practical guidelines for conservation activities (Baker, 2006).

In that strategy, sustainable development is defined as "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs." Sustainable development, environmental quality, and economic development have become compatible activities. Environmental protection cannot be achieved at the expense of limiting economic development; instead, the entire discussion on ecological issues should be directed towards achieving sustainable development (Črnjar & Črnjar, 2009, 78).

Sustainable development is a way of looking at the world that emphasizes the interconnectedness of economic, socio-cultural/social, and ecological changes. It also represents a way to describe our collective pursuit of a quality life, which includes economic development, social inclusion, and environmental sustainability. This approach implies that all aspects of development must be integrated to achieve a long-term balance between growth, social justice, and the conservation of natural resources (Todorov et al., 2022, 355).

Four main principles are considered key to the concept of sustainability: 1. A holistic approach to planning and strategy, as opposed to unplanned development; 2. The preservation of key ecological processes; 3. The protection of human heritage and biodiversity; and 4. Development in a way that ensures the long-term sustainability of productivity for future generations (Lane et al., 2022). Sustainable tourism development is a key component for the long-term protection of natural resources, as well as for the enhancement of economic and social development. Ecotourism, with its principles, significantly contributes to achieving this goal. Therefore, the integration of ecotourism principles into the tourism industry can establish a balance between economic development and the preservation of the natural environment, ensuring the long-term sustainability of the tourism sector (Todorov et al., 2023, 80).

Sustainable tourism does not only imply the preservation of nature or socially responsible business practices. The theoretical definition of sustainable tourism encompasses economic, social, and environmental protection dimensions (Penjišević et al., 30).

The 2030 Agenda for Sustainable Development covers a wide range of interconnected goals, including the eradication of poverty, economic growth, social inclusion, and achieving environmental sustainability by 2030. Policy decisions to achieve the Sustainable Development Goals (SDGs) must be relevant to the policy context and developed in collaboration with relevant stakeholders, taking into account local and national conditions (https://sdgs.un.org/2030agenda). The New Urban Agenda and the 2030 Agenda for Sustainable Development outline various levels of action and engagement, the most visible being global, regional, national, and local levels. Paragraphs 3 to 5 of United Nations General Assembly Resolution 70/1, which established the 2030 Agenda (United Nations 2015: 3/35), emphasize this. As prescribed in the SDG framework goals, and later reinforced by the New Urban Agenda, achieving the globally agreed-upon vision is only possible through actions at multiple levels – from micro to meso and macro levels. To realize the principle of "leaving no one behind," a series of actions is required, ranging from ensuring a consistent method for measuring and understanding inequalities that all countries can uniformly apply (as proposed through the SDG monitoring framework), to implementing concrete actions at the meso (national/regional) and micro (city, settlement, and neighbourhood) levels (Ndugwa & Mwaniki, 2024, 35).

As stated by the authors Rabotić and Joksimović, (2013, 32-38; 2022, 80), sustainable development and ecotourism can be successfully integrated with urban tourism by enhancing green spaces in urban areas, preserving parks and botanical gardens, and introducing educational programs and activities that promote environmental awareness. Additionally, the use of renewable energy sources and the encouragement of environmentally friendly transportation in cities further contribute to sustainability. The development of local ecotourism attractions within urban environments allows tourists to explore nature and ecological initiatives while simultaneously contributing to economic development and the preservation of the local community.

Urban areas today face significant challenges in balancing economic development and improving environmental quality (Grube, 2023, 1674). Therefore, it is essential to develop appropriate solutions that minimize negative impacts, establish sustainability, preserve nature, and enhance living conditions in cities. One of the contemporary approaches to urban planning that provides mechanisms to address these issues is the concept of "green cities." According to the definition, a "green city" is a city that achieves high environmental performance according to established criteria regarding environmental quality (air, water, land, and biodiversity), efficient use of resources (water, energy, land, and other available resources), and mitigation and adaptation to risks arising from climate change. This concept also maximizes economic and social benefits, taking into account the city's fundamental characteristics such as population size, socio-economic structure, and geographic and climatic characteristics (Milojević & Mikić, 2022, 72).

Ecotourism is travel primarily based on an interest in the natural history of a destination. It is a form of nature-based tourism, where the focus is on learning, sustainability (preserving natural resources and involving the local community), and ethical planning, development, and management (Fennell, 2015, 17). Often premised upon high levels of community participation, ecotourism is dependent on collaboration between locals and other tourism stakeholders (Chuitsi & Saarinen, 2019, 351). Significant aspects of shaping ecotourism include the motives for exploring the natural environment and the resources that facilitate its respect, as well as creating economic benefits for the local community (Kočović De Santo, 2022, 59). Ecotourism and urban tourism represent key segments of the global tourism industry that are continuously gaining popularity in the modern world. These tourism products not only allow visitors to enjoy natural beauty, cultural richness, and urban attractions but also place special emphasis on nature conservation and sustainable development. In this context, the selection of appropriate eco-destinations and sustainable urban tourist locations becomes crucial for ensuring harmony between tourism activities and ecosystem preservation. Ecotourism promotes nature conservation, while urban tourism supports the preservation of cultural heritage and the improvement of local communities. Both forms of tourism encourage responsible behaviour towards nature and raise environmental awareness among tourists. In addition to providing unforgettable experiences for visitors, ecotourism and urban tourism play a key role in supporting local economies and preserving biodiversity (Todorov et al., 2023, 178).

According to UNWTO (2024), Urban Tourism is "a type of tourism activity which takes place in an urban space with its inherent attributes characterized by non-agricultural based economy such as administration, manufacturing, trade and services and by being nodal points of transport. Urban/city destinations offer a broad and heterogeneous range of cultural, architectural, technological, social and natural experiences and products for leisure and business". According to the United Nations, in 2015, 54% of the world's population lived in urban areas and, by 2030, this share is expected to reach 60%. Along with other key pillars, tourism constitutes a central component in the economy, social life and the geography of many cities in the world and is thus a key element in urban development policies. Urban tourism can represent a driving force in the development of many cities and countries contributing to the progress of the New Urban Agenda and the 17 Sustainable Development Goals (https://www.unwto.org/urban-tourism), in particular, *Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.* Tourism can advance urban infrastructure and accessibility, promote regeneration and preserve cultural and natural heritage, assets on which tourism depends (https://tourism4sdgs.org/sdg-11-sustainable-cities-communities/ Viewed: 06.08.2024).

Investment in green infrastructure (more efficient transport, reduced air pollution) should result in smarter and greener cities for, not only residents but also tourists. Tourism is intrinsically linked to how a city develops itself and provides more and better living conditions to its residents and visitors. Fulfilling tourism's potential as a tool of sustainable and inclusive growth for cities requires a multi-stakeholder and multilevel approach based on close cooperation among tourism and non-tourism administrations at different levels, private sector, local communities and tourists themselves. Likewise, the sustainable development and management of tourism in cities needs to be integrated into the wider urban agenda (https://www.unwto.org/urban-tourism Viewed: 06.08.2024).

Urban tourism is a multifunctional tourism product that meets various needs of tourists through its offerings. As a specific tourism product, it experienced expansion in the second half of the 20th century as a result of the intense development of tourism infrastructure, enabled by the urbanization process in places initially considered peripheral (Podovac, 2016, 2). According to the Law on Tourism (2019, Article 3, Paragraph 1, Item 39), a tourism product is a set of interdependent elements organized in practice as a distinct value chain comprising material products and services, natural values and cultural assets, tourist attractions, tourism superstructure, and tourism infrastructure. The tourism product encompasses all elements that can be marketed, whether it is an individual entity such as a hotel or park, or a collective set of resources. The basic components of a tourism product include attractive locations, goods and services, and the accessibility of the tourist area. This product consists of tangible elements and intangible services that consumers engage with due to their appeal (Tošić, 2023, 139).

Urban or city tourism refers to travel to larger or smaller cities for sightseeing, shopping, visiting relatives and friends, conducting business, and enjoying culture, entertainment, and recreation (Rabotić, 2013, 163). Urban tourism is a complex category of study due to its frequent overlap with other forms of tourism in urban settings, which necessitates a systematic consideration of this concept. Its complexity arises from the fact that it is the subject of research across various scientific disciplines such as management, tourism, marketing, spatial planning, ecology, geography, and economics (Podovac, 2016, 163).

According to the current Tourism Development Strategy of the Republic of Serbia (2016, 34), the tourism products of particular importance for the development of tourism are:

1) City tourism (urban tourism);
2) Events (cultural, sports, etc.);
3) Mountain tourism;
4) Spa & wellness in spas/health tourism;
5) Thematic routes;
6) Rural tourism;
7) Nautical tourism;
8) Meetings, incentive travels, conferences, and exhibitions/events (MICE tourism);
9) Cultural heritage (cultural tourism);
10) Special interests;
11) Transit tourism.

According to the Development Plan of the City of Kragujevac for the period 2021-2031 (p. 48), tourism represents a promising development opportunity for the city, complementing other economic sectors. Tourism development is an integral part of the city's overall development and economy. The city possesses significant but underutilized potential that can be leveraged to build a sustainable and attractive tourism offer, placing Kragujevac on the map of true "tourist cities" in Serbia. Kragujevac has the potential to develop seven core tourism products. Market research represents a fundamental function in marketing research, serving as the foundation for conducting research and development, production and sales, promotional, and other activities of a tourism enterprise. Analyzing a company's opportunities in the tourism market allows for the collection of sufficient information to identify problems and consider their potential solutions. Market research precisely defines the needs, motives, and behavior of tourists to assess the existence and extent of demand for the products and services of the tourism enterprise. After market analysis and research, the focus shifts to studying consumer behavior tourists, which is an integral part of market research (Čerović, 2004, 1).

The tourism market consists of two main components: supply and demand, as well as tourism intermediaries. The interaction between these components forms the tourism market. The source of tourist mobility is the emitting market, while the receptive market is characterized by foreign tourist consumption as opposed to domestic (national) consumption (Gržinić, 2019, 62).

Methodology

As part of the inter-sectoral and inter-agency cooperation between the Republic Secretariat for Public Policies (RSJP), the Ministry of Tourism and Youth (MTO), the Tourism Organization of Serbia (TOS), and local tourism organizations (LTO) in Kragujevac and Sokobanja, a pilot project was implemented titled "*Improving the Work of Tourism Organizations in Conducting Market Research to Enhance Public Services*" The market research in the territories of Kragujevac and Sokobanja was conducted between June and July 2023. This pilot project also included the education sector, with fourth-year students from the Tourism High School in Sokobanja and students from the Faculty of Hotel Management and Tourism in Vrnjačka Banja and the Faculty of Economics in Kragujevac volunteering to conduct tourist surveys in the city of Kragujevac and the municipality of Sokobanja. The training for volunteer researchers in tourist market analysis was conducted by the marketing agency "Pro Pozitiv" from Belgrade, hired by Republic Secretariat for Public Policies, Republic of Serbia. For the purposes of this study, empirical data from the survey, conducted on a sample of 302 respondents in the city of Kragujevac, was used. Data analysis was performed using the statistical software SPSS 26.0, with the note that similar research has not been conducted at the national level by the Republic Secretariat for Public Policies. The survey questions included demographic data, motivations for visiting, satisfaction with the tourist offer, perceptions of the ecological and social aspects of tourism, and recommendations for improving the tourist offer. The city of Kragujevac is located in the central part of the Šumadija region, 140 km south of the capital Belgrade via highway E10. It covers an area of 835 square kilometers, according to the last demographic census (2022), the city of Kragujevac has a population of 175.802, and is the largest city in Šumadija and the fourth largest in Serbia. It is situated at an average altitude of 180 meters. The city lies on the banks of the Lepenica River, in the Kragujevac basin, where the branches of the Šumadija mountains meet: Rudnik, Crni Vrh, and the Gledić mountains. Kragujevac and its surroundings boast rich natural resources, offering numerous opportunities for the development of transit, stationary, business-event, sports-recreational, hunting and fishing, health, and rural tourism (https://arhiva.kragujevac.rs/o-kragujevcu/turizam/ Viewed: 30.07.2024.).

Kragujevac is an industrial city, but also one with significant agricultural land, covering a total area of 83,475 hectares, of which 63.9% belongs to rural areas and 36.1% to urban zones. The city represents 35% of the total area of the Šumadija district and about 1% of Serbia's territory tourism (Strategija održivog razvoja grada Kragujevca 2013-2018). Kragujevac has a temperate-continental climate, with July being the warmest month (average temperature of 27°C) and January the coldest (-0.5°C). The average annual temperature is 11.5°C, with 50 to 60 humid and tropical days per year. The average annual precipitation is 530 mm, while there are 30 days of snow, 20 days of fog, and 2 days of hail annually. The city offers various forms of tourism depending on whether the resources are primarily natural or social. Social resources support business tourism (M.I.C.E. – meetings, incentives, conventions, events), conference, event-based, cultural, and religious tourism, while natural resources support eco-tourism, rural tourism, hunting and fishing, and sports-recreational tourism. The city's macro-regional influence and capacities create opportunities for the development of fair, business, and conference tourism (Strategija održivog razvoja grada Kragujevca 2013-2018). The most important tourist attractions in the city of Kragujevac include the "Milošev venac" complex, which features the Old Court Church and the Assembly building, Amidža's Konak from 1818, the Konak of Prince Mihailo from 1860 (now the National Museum), the building of the First Kragujevac Gymnasium from 1833, the "Knjaževsko-srpski teatar" building from 1835, and the "Old Foundry" Museum, which showcases the development of industrial production in Serbia. Other significant attractions are the "October 21st" Memorial Park, with monuments dedicated to the victims of executions during World War II, and the "Kragujevac Aquarium" the first public aquarium in Serbia (https://arhiva.kragujevac.rs/o-kragujevcu/turizam/ Viewed: 30.07.2024.). According to data from the Ministry of Tourism and Youth (https://mto.gov.rs/tekst/308/sektor-za-turizam.php), Kragujevac recorded a total of 30.170 tourist arrivals in the period from January to June 2024, representing an 11% increase compared to the same period in 2023. The number of domestic tourist arrivals was 18.688 (an increase of 8.2%), while the number of foreign tourist arrivals was 11.482 (an increase of 15.8%). The aim of the research is to identify key factors influencing both the supply and demand in tourism. Based on these findings, future local strategies and tourism development programs will be created to improve tourism in line with sustainability principles.

Empirical results and discussion

Table 1. ***Demographic Characteristics and Average Age of Tourists According to Sociodemographic Characteristics (in Percentages)***

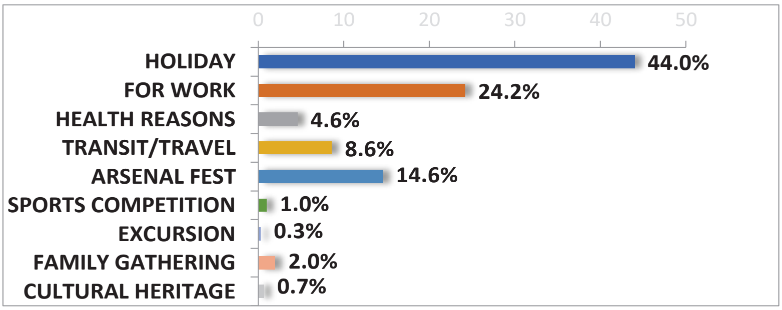
Category	Subcategory	Percentage (%)
Gender	Male	48%
	Female	52%
Education	Secondary Education	42.4%
	Higher Education	57.6%
	18-29 years	38.1%
	30-44 years	38.4%
	45-59 years	16.9%
	60 and more	6.6%
Employment Status	Employed	70.5%
	Retiree	5.6%
	Unemployed	6.6%
	Student	15.9%
	Not Disclosed	1.3%
Motivation for Travel	Health Reasons	49.3%

	Business Obligations	37.6%
	Leisure	35.2%
	Transit Travel	37.5%
	Arsenal Fest	27.5%

Source: Author's research

Table 1. provides an overview of the demographic composition and average age distribution of tourists from a sample of 302 respondents. The gender distribution is nearly balanced, with 52% female and 48% male. A significant majority, 57.6%, have attained higher education, indicating an educated tourist demographic. The largest age groups are 30-44 years (38.4%) and 18-29 years (38.1%), suggesting that younger and middle-aged adults dominate the visitor profile. In terms of employment, 70.5% are employed, 15.9% are students, 6.6% are unemployed, and 5.6% are retirees. Travel motivations vary, with health reasons cited by 49.3%, followed by business obligations (37.6%), leisure activities (35.2%), transit (37.5%), and event attendance like Arsenal Fest (27.5%), reflecting diverse travel purposes. The calculated arithmetic means for the provided demographic data are as follows: For Gender, the average is 50, calculated from 48% male and 52% female. In terms of Education, the average is 33.33, derived from the percentages of 0% for Primary School, 42.4% for Secondary School, and 57.6% for University. The Age Groups have an average of 24.0, based on the values of 38.1% for ages 18-29, 38.4% for ages 30-44, 16.9% for ages 45-59, and 6.6% for those aged 60 and older. Finally, for Employment Status, the average stands at 19.82, with 70.5% employed, 5.6% retirees, 6.6% unemployed, 15.9% students, and 1.3% classified as other. Regarding the Motivation for Travel, the average percentage is 37.42%, calculated from the motivations of 35.2% for vacation, 37.6% for work, 49.3% for health reasons, 37.5% for transit/travel, and 27.5% for Arsenal Fest.

Graph 1. ***What is the main motive for visiting Kragujevac***



Source: Author's research

Graph 1. shows the reasons tourists visit Kragujevac, revealing the diversity of motives for coming to the city. The largest percentage of tourists visit for leisure, accounting for 44% of all visits. Business travelers are the next largest group, representing 24.2%, highlighting the importance of business activities in attracting visitors. The Arsenal Fest, a significant cultural event, attracts 14.6% of tourists, while transit or passing through the city makes up 8.6% of visits. Health reasons motivate 4.6% of visitors, while sports events and excursions have a smaller impact, with 1% and 0.3% participation, respectively. Family gatherings account for 2% of visits, and cultural heritage attracts 0.7% of tourists. These data highlight the diverse motives for visiting Kragujevac, with a focus on leisure and business visits, as well as the significance of cultural events like Arsenal Fest.

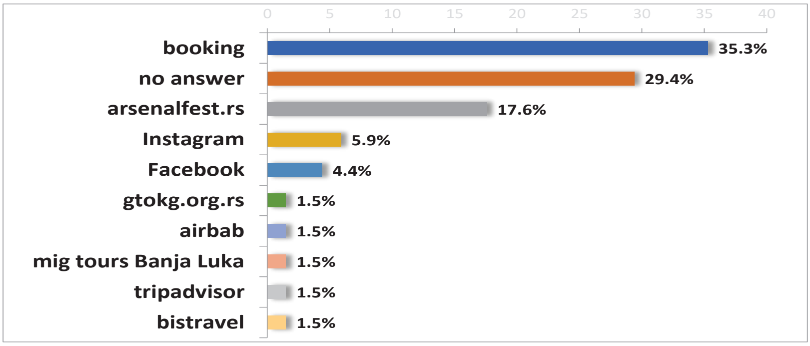
Table 2. ***A source of information before traveling***

Source of Information	First Response (%)	Top three responses (%)
Recommendations from friends and family	35.8	42.4
Personal positive experiences	37.7	37.7
Websites, online booking systems, and social media	18.5	21.5
Traditional media (TV, radio, newspapers)	3.3	5.3
Recommendations from doctors	3.0	3.0
Information from employers	1.7	1.7

Source: https://visit-serbia.info/sombor-city-card/

Table 2. shows the sources of information that tourists use before traveling to Kragujevac, revealing various channels through which visitors obtain information about the destination. Recommendations from friends and family are the most common source, cited by 35.8% of respondents as their primary source, and a total of 42.4% as multiple sources. This highlights the importance of word-of-mouth recommendations in travel planning. Personal positive experiences from previous visits are the second most important source, matching the percentage of the first response with 37.7%. This data shows that many tourists revisit Kragujevac due to favorable experiences they had previously. Websites, online booking systems, and social media are the third most significant source, mentioned by 18.5% of respondents as their primary source, with a total participation of 21.5% when considering multiple responses. These channels are becoming increasingly important in the decision-making process for travel. Traditional media, such as television, radio, and newspapers, are less represented, with 3.3% of respondents citing them as their primary source and a total participation of 5.3%. Recommendations from doctors and information obtained from employers are the least used sources, with low percentages of 3% and 1.7%, respectively, indicating specific situations in which these sources are utilized. These data emphasize the dominant role of personal experiences and recommendations in informing tourists, while digital platforms are gradually increasing in importance, though traditional media still plays a smaller but significant role.

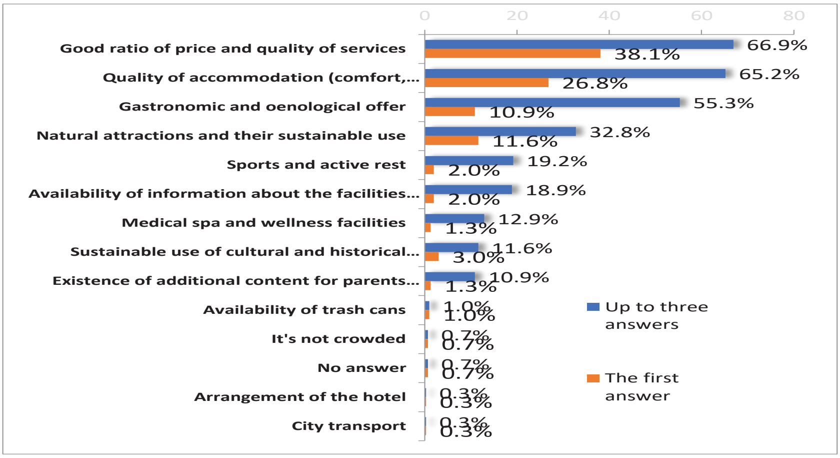
Graph 2. ***Which sites and booking systems were used before the trip***



Source: Author's research

Graph 2. shows the specific websites and booking systems that tourists used before traveling to Kragujevac. This question was answered by 68 respondents, which constitutes 23% of the total number of respondents. The most popular site is Booking, used by 35.3% of respondents, indicating its dominance in online accommodation bookings. A significant percentage of respondents, 29.4%, did not provide an answer, which might suggest either a lack of use or difficulty recalling specific sites. The website arsenalfest.rs, dedicated to the popular music festival in Kragujevac, was used by 17.6% of respondents, underscoring its importance in attracting tourists. Social media platforms were also used but to a lesser extent. Instagram was used by 5.9% of respondents, while Facebook was used by 4.4%. The official website of the Kragujevac Tourist Organization, gtokg.org.rs, as well as Airbnb, Mig Tours Banja Luka, TripAdvisor, and Bistravel, were each used by 1.5% of respondents. These data show that while sites like Booking dominate the online booking process, specialized websites and social media play an important role in informing and planning travel for specific segments of tourists.

Graph 3. ***Reasons for the satisfaction of the visit***

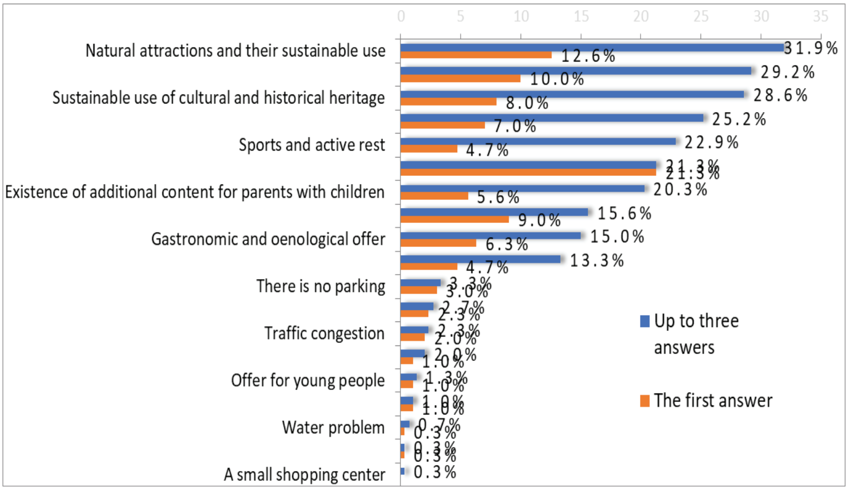


Source: Author's research

Graph 3. shows the reasons for tourist satisfaction during their visit to Kragujevac, based on responses from participants who could list up to three reasons. The largest number of respondents expressed satisfaction with the good value for money of services, with 66.9% including it among their top three reasons and 38.1% naming it as their primary reason. The quality of accommodation, including comfort and sustainable energy use, was also highly rated, with 65.2% mentioning it among their top three reasons and 26.8% as their main reason. Gastronomic and wine offerings were a significant factor for 55.3% of respondents, while 10.9% cited it as their main reason for satisfaction.

Based on the data collected regarding the reasons for tourist satisfaction during their visit to Kragujevac, the standard deviation helps to assess the variability in responses among participants. Among the most cited reasons, value for money leads with 66.9% of respondents including it in their top three reasons. The quality of accommodation, with a focus on comfort and sustainable energy use, was highlighted by 65.2%, followed by gastronomic and wine offerings at 55.3%. Other factors, such as natural attractions (32.8%), sports and active leisure (19.2%), and medical spa facilities (12.9%) contributed to satisfaction, albeit to a lesser extent. These figures indicate a significant variation in satisfaction factors, reflecting diverse priorities among tourists, but also pointing to core aspects that hold broad appeal.

Graph 4. ***Reasons for dissatisfaction with the visit***



Source: Author's research

Graph 4. shows the reasons for tourist dissatisfaction in Kragujevac, based on responses where participants could list up to three reasons. The most frequent concern was natural attractions and their sustainable use, mentioned by 31.9% of respondents, with 12.6% listing it as their main reason. Lack of information about local attractions was the second most cited issue, at 29.2%, with 10% stating it as their primary reason. The sustainable use of cultural and historical heritage followed, with 28.6% including it among their top three, and 8% as their main reason. Spa and wellness facilities caused dissatisfaction for 25.2%, while 7% listed it as their primary issue. Sports and leisure activities generated dissatisfaction for 22.9%, with 4.7% naming it as their main concern.

Additionally, 21.3% of respondents did not specify concrete reasons for dissatisfaction. Facilities for parents with children were problematic for 20.3%, with 5.6% citing it as the main reason. Poor value for money was a concern for 15.6%, and 9% identified it as their primary issue. Gastronomy and wine offerings dissatisfied 15%, while 6.3% listed it as their main reason. Accommodation quality affected 13.3%, and 4.7% cited it as the primary concern. Minor issues included parking (3.3%), electricity problems in campsites (2.7%), traffic congestion (2.3%), and Arsenal Fest (2%). Other smaller complaints included offerings for young people (1.3%), lack of trash cans (1%), water issues (0.7%), and nightlife and small shopping centers (0.3%)

The standard deviation of 11.31% for the percentage of respondents listing reasons among their top three highlights a considerable variability in the factors contributing to tourist dissatisfaction. While certain issues, such as the sustainable use of natural attractions, were cited by a significant portion of respondents, other concerns, like traffic congestion or nightlife offerings, were mentioned far less frequently, indicating a broad range of experiences and dissatisfaction levels among tourists. This spread suggests that while some aspects of the tourist experience are more universally problematic, others affect only a smaller subset of visitors.

One of the ways to improve the environment is through digitalization, specifically by purchasing an online ticket that consolidates a range of services for a single price, inspired by the greenest city in the Republic of Serbia, Sombor. The city of Sombor has introduced the "*Sombor City Card*" for the first time. This unique digital card allows tourists and residents to visit cultural institutions, tourist attractions, dining establishments, and other locations in Sombor at discounted prices. This system provides tourists with an easier and simpler way to visit numerous destinations without worrying about tickets. The "*Sombor City Card*" is part of the "*Zaplovi Srbijom*" project and represents a universal pass for city events and institutions. This project contributes to a cleaner environment by enabling all services to be handled digitally (https://vtc.rs/sombor-city-card/).

Figure 1. "Sombor City Card"

Source: https://visit-serbia.info/sombor-city-card/

Conclusion

Based on the data obtained about tourists in Kragujevac, it is evident that most tourists are satisfied with the relationship between price and quality of services. As the first response, 38.1% of respondents rated this while 66.9% of respondents included this answer among their top three. The quality of accommodation and gastronomic offerings were also highly rated; as the first response, 10.9% of respondents rated the quality of accommodation and gastronomic offerings while 55.3% of respondents included these ratings among their top three. These results indicate an adequate level of basic tourist products in Kragujevac. Kragujevac attracts visitors due to its cultural events, natural and cultural attractions, underscoring its potential to cater to diverse interests. Recommendations from friends and previous positive experiences contribute to the city's good reputation. However, there are concerns about the sustainable use of natural resources and cultural heritage, which require more attention and improvements in preservation and promotion. The problematic availability of information about tourist attractions limits the visitor experience, suggesting the need for enhancements in digital and physical infrastructure for tourist information. The quality of accommodation has been rated positively, but improvements are needed in the sustainable use of resources, considering that 4.7% of respondents cited this reason as their first response, while 13.3% included this issue among their top three answers. To improve the sustainable use of resources in accommodation facilities, they should reduce water consumption, use energy more efficiently, implement ecological practices, utilize renewable energy sources, recycle waste, and provide training for staff on sustainable practices. The lack of family-friendly activities, sports options, and nightlife has also been identified as areas for future development and improvement. Addressing issues such as city congestion, parking, and traffic is crucial for improving the overall visitor impression of the destination, encouraging repeat visits, positive reviews, and personal recommendations. Market research is essential for the development of urban tourism in Kragujevac, as it allows for the analysis of visitor needs and preferences, identification of target markets, and more effective marketing strategies. It also provides insights into the city's competitive advantages, facilitating the development of new tourism products and services. Collaboration with academic institutions and the private sector is vital for the successful implementation of recommendations and the long-term sustainability of tourism in Kragujevac, as academic institutions can provide research and analyses that identify key areas for improvement, while the private sector offers insights into market trends and consumer demands. Joint projects can lead to innovations, training for employees through specialized educational programs, as well as strengthening the promotion of Kragujevac as a tourist destination through joint marketing campaigns. This synergy creates a tourism sector that is economically sustainable, socially responsible, and environmentally friendly. To further enhance sustainable development, it is important to implement strategies that include the use of renewable energy sources and promote environmentally friendly practices. Investing in green infrastructure and educating local communities about sustainable tourism can significantly contribute to the preservation of natural and cultural resources, ensuring the long-term viability of the destination.

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POSSIBILITIES AND PERSPECTIVES OF ENSURING COMPLIANCE WITH TAX OBLIGATIONS AND PROTECTION AGAINST TAX EVASION

Abstract

In all countries, including Serbia, taxes play a significant role in financing various public needs. Compliance with tax obligations affects the efficiency and effectiveness of the tax policies of all world governments, including ours, especially in generating income, and also represents a viable and possible long-term strategy that will help with the state's financial independence. The irregular tax collection and tax evasion seems to be a problem for authorities around the world, and it is necessary to find out ways of ensuring the tax payment, which is the purpose of this article. Throughout history, for better understanding, the taxes are also shown. In the article itself, due to the need of finding new and confirming the existing ways of ensuring tax payment, the importance of legal regulations and criminal protection in order to ensure tax payment was highlighted, and in addition, voluntariness was shown as a possible method of achieving the goal. Influence factor based analysis, practice and legal analysis, matter solution suggestions are also set as the goal of the article, with firm purpose of ensuring public revenues, ie the state budget.

Key words: *tax, taxpayer, tax evasion, law, tax payment security*

JEL classification: H260, K11

МОГУЋНОСТИ И ПЕРСПЕКТИВЕ ОБЕЗБЕЂЕЊА ПОШТОВАЊА ПОРЕСКИХ ОБАВЕЗА И ЗАШТИТЕ ОД ПОРЕСКЕ УТАЈЕ

Апстракт

Порези играју значајну улогу у погледу финансирања различитих јавних потреба, у свим државама те и Србији. Поштовање пореских обавеза утиче на ефикасност и ефективност пореске политике свих влада света, па и наше, нарочито у стварању прихода, а такође представља остварљиву и могућу стратегију на дуге стазе која ће помоћи држави да буде финансијски независна. Оно што представља проблем властима широм света је нередовна наплата пореза и пореска утаја, те је потребно налазити могућности обезбеђења плаћања по-

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реза што је и циљ овог чланка. Ради бољег разумевања пореза приказан је порез кроз историју. У самом чланку је услед потребе изналажења нових и потврђивања постојећих начина обезбеђења плаћања пореза истакнут значај законске регулативе и кривичноправне заштите у циљу обезбеђења плаћања пореза и поред тога приказана добровољност као могући метод остварења циља. На основу анализе фактура утицаја, праксе и законске анализе дати супредлози за решење овог питања постављеног као циљ чланка, а све у свху обезеђења јавних прихода односно буџета државе.

Кључне речи: *порез, порески обвезник, пореска утаја, закон, обезбеђење плаћања пореза.*

Introduction

The key role of taxes on the territory of each and every state, including ours, is reflected in the financing of public needs, indirectly through the budget, the financial instrument of the state. The development of the social community requires an increased collection of public revenues, and public revenues are generally identified as taxes because they have the biggest part in the state's revenues. On the other hand, the taxpayers' lack of knowledge about their tax obligations, together with frequent changes and complex tax regulations, leads to taxpayers negligence and failure to comply with tax obligations, which ultimately affects tax revenues. The budget mechanism, as a basic instrument in financing public needs, captures a huge part of the national income and directs it to various purposes. (Marjanović, 2021). Today, it is a special financial mechanism with numerous and varied, often decisive, economy and society actions. We find budget spending of funds, and thus public tax revenues, in the field of education, health, salaries of public servants, infrastructure development and other public needs. Income generation at all levels of government is necessary for society to provide with important needs in numerous areas. A significant role is played by ensuring compliance with tax payments, so that the state does not use an increase in tax liability as a key increase in tax revenues. Therefore, the main goal of taxation in any country, developed or underdeveloped, is the economy growth aimed at generating income.

The basic characteristic of taxes is that they are collected in money, periodically and constantly. At the same time as tax collection, tax evasion occurs, which often turns into the criminal offense of tax evasion (Jovanović, 2022). This frequency of crimes affects all countries in the contemporary world, so it has become a trend and a problem that needs to be solved.

Due to the article topic complexity, a multidisciplinary approach was taken, from economics and law point of view, in order to provide at least a nuanced comprehension of understandings that affect the intentions of taxpayers framed by voluntariness and law, in order to develop a contribute strategy for ensuring compliance with the tax obligations.

Theoretical backgrounds

Historical evolution of tax and its non-compliance

Taxes and the tax system have been known to the civilization since the Eastern despotisms, where tax collection was based on the powers and responsibilities of the office clerk apparatus. In ancient Egypt colored by hierarchy and democracy, the state treasury, in which all the collected taxes were located, was managed by the chief treasurer, while the pharaoh showed ownership of the land by introducing mandatory taxes and tributes for users, since he was its owner. (Atanasovska Cvetković, 2023). The first laws were passed on the territory of Mesopotamia: the Ur Nammu's Code, the Lipit – Ishtar's Code, the Bilalames Code, the Hammurabi Code, which indicate various tax types existence, property and land based. For example, the Lipit - Ishtar Code in Article 18 promulgates the consequences for the owners in the event of tax non-payment, because of the acquired taxpayer status based on the right of ownership of the property (they were in understanding of the right of ownership) (Roth, 1995). In the eastern despotism of Babylon, a local official - the *shakanaku* - collects taxes, and the taxes were collected on property bases. Hammurabi's era is characterized by the military tax (Article 48 of Hammurabi's Code) and the hierarchical taxation base. Roman law recognizes tribute as a personal tax, and the public treasury gains importance (Atanasovska Cvetković, 2022). The ability of tax collectors (created on the basis of *societas* – contract of partership) to sell property (land) with purpose of settling the tax debts, was also the characteristic of the Roman era (Digesta 19. 1, 52 pr.). This contractual relationship (*societas*), related to this concrete era, was based on the combination of skills, resources or combination of both, on the part of the contractor, with the aim of achieving and fulfilling the expected economic goal (Jovanović, Atanasovska Cvetković, 2023). In addition, observation of taxes through property relations, in Roman law, can be viewed through the family law, for example through the provision "A husband cannot collect from his wife any tax or tribute paid on account of the dotal lands (the land given as a dowry), for these charges should be paid out of the crops (from the crops on that land)" (D. 25. 1, 13.). After the collapse of the Roman Empire, Byzantium kept the system of general taxation and taxes were paid with nomism money (Whittow, 1996). The agriculture tax system of the Byzantine Empire, especially from the 3rd to the 9th century, also, should be mentioned here (Simonović, 2024).

The Serbian tax system began to be created with the establishment of the state of Serbia and the existence of the state treasury, owned by the ruler, whose enrichment was contributed by: soće – tax, baština – property tax – both was paid in grain or money (1 perper – midieval money), two times a year; dimnice - tax on the hearth; harač - paid by every man and the obligation of the vlastela (kind of lords) to pay „imperial aid". Furthermore, the tax system was changed, and during the reign of the Turkish Ottomans, the tax appeared as: tax in blood, harač – personal tax, glavarina – tax imposed as a duty for every human head, kultuk, spah tithe, paid in kind, and in the uprising Serbia: national and nahi tax. A major change in the tax system was introduced by the Constitution of 1835, introducing equality of tax payments. In this way, in brief, historical owerview of taxes was given only to confirm the existence of taxes since ancient times and its importance, which modifies with the changes of the government form.

The imposition of tax obligations and their avoidance is also as old as the state itself. Thus, the forerunner of today's criminal act tax evasion, was represented by various forms of evasion, concealment, non-payment or avoidance of paying taxes and other public duties to the state, or once to the ruler. For the first time, the criminal legislation on our teritory introduced the criminal offense of tax evasion – „failure to pay royal duties" with the Dušan's code, but also criminal sanctions for its perpetrators were promulgated.

In accordance with changes on the international level and changes in our country, the names, titles of the criminal acts or offences, elements of their existence, their characteristics and forms of expression are changed. Those changes also applied to criminal offenses and acts related to tax evasion, as well as criminal sanctions imposed on perpetrators of the acts.

Legal regulation of taxes

In addition to ensuring voluntary compliance/adherence to the tax obligations, the legislator foresees forced compliance, which means tax compliance due to the existence of elements of coercion. Primarily, the legislator determines the legislative concern by establishing that the taxes, as a type of public revenue and income, can be introduced only by law, namely on consumption, income, profit, property and transfer of property of natural and legal persons (Article 15 paragraph 1 of the Law on the Budget System).

Then the legislator determines the significant role of taxes by stating that according to the law on the budget system of the Republic of Serbia, also, to the budget of the Republic of Serbia, the following public revenues and incomes belonged: taxes, fees, impositions, donations, transfers and incomes in accordance with the law, as well as the incomes generated by the use of public funds. An exhaustive list of public revenues and receipts contained in the budget confirms the statement that taxes are playing a key role, given that, in addition, to the aforementioned content of the budget, the legislator first determines taxes established by law: (1) value added tax; (2) excise taxes; (3) personal income tax; (4) corporate profit tax; (5) tax on the use, holding and carrying of certain goods; (6) tax on international trade and transactions. It is natural that taxes are treated as the main source of government revenue because government revenue comes from limited natural resources.

The legislator should strive for tax simplicity, which refers to a number of concepts, including the tax simplification itself, tax forms and, most importantly, tax laws. This finding is difficult, given that the issue of taxes permeates numerous legal regulations on taxes, the budget, the spending of budget funds and the criminal protection of society and the state. Despite the difficulties, tax simplicity should be a feature of the tax law, which would reduce unintentional mistakes that lead to potential tax problems. Numerous studies, such as the study made by Cahyonowati and other researchers (Cahyonowati, 2023), have proven that the simplicity of taxes contributes to the improvement of the taxpayers behavior. The necessity of simplifying the law should be the basis for the adoption of tax law, which in some way represents the taxation foundation question, given that, it determines the taxation subject, the tax base, the taxpayer, the tax rate or amount, all exemptions and reliefs from taxation, as well as the method and due dates for tax payment. We observe this priciple of simplification through legal regulations, considering that the tax simplification forms and methods of tax payment are implied in contemporary society, in which modern methods and innovative technical achievements should be used in the state authorities work.

Through the theory, the standing opinion is that the taxpayer intention is to respect the tax obligations, but essentially, is the desire to respect tax laws, which is influenced by morality, the fairness perception and the applying penalties possibility.

Failure to comply with tax obligations - criminal offences

Tax avoidance is a complex and dynamic phenomenon influenced by a wide range of factors. The law complexity and „the tax law legal loopholes“ can create opportunities for tax avoidance by exploiting the law ambiguities or its legal loopholes. Decisions on tax planning can be influenced by economic factors such as: recession, inflation or changed market conditions. Mentioned decisions, further, may influence on tax planning decisions, leading taxpayers to adjust their strategies in response to economic pressures or opportunities. Current social conditions, globalized economy and modern technology provide natural and legal persons with easier opportunities, methods and tools for tax avoidance or evasion.

The history of law in general, including the national history of Serbian law, has recorded various forms and types of manifestation of tax crimes, including ways of sanctioning such negative social behavior (Coković, 2017).

Due to failure of tax obligation compliance, depending on the amount of unpaid tax, the taxpayer commits a tax offense or a criminal act. *Tax evasion* is a basic fiscal crime in our legal system, systematized as a crime against the economy, caused by tax non-payment in the amount of more than 150,000 dinars. Tax evasion regulated by Article 225 of the Criminal Code of the Republic of Serbia determines the incrimination of the act and the subjective condition - the secrecy of the act. The weight of the threatened penalties for Serbian tax evasion is directly proportional to the amount of the avioded obligation and for the sake of transparency, it is shown in the following table:

Table 1: *Sanctions for the committed crime of tax evasion*

The amount of tax whose payment is avoided exceeds	***Threatened punishmen*t**
one million dinars	one to five years imprisonment and a mandatory fine
five million	two to eight years imprisonment and a mandatory fine
fifteen million	three to ten years imprisonment and a mandatory fine

This threat of punishment is consistent with Cooter and Ulen’s assertion that the “seriousness of the crime” and “(expected) punishment” create a relationship where the punishment is more severe the more serious the crime is (Cooter, 2017).

The object of protection in the criminal act of tax evasion is the social community, which implies the protection of income, through taxes, is realized by the state itself.

In order for the criminal act of tax evasion to occur, it is necessary that, in addition of fulfilling the conditions of incrimination (failure to pay taxes in the amount of more than 150,000 dinars), the subjective condition of the criminal act must also be fulfilled, that is, the offense must be concealed. If the amount is less than the prescribed, it is a tax violation.

Such incrimination of tax-related acts and the provisions of sanctions for their enforcement is often accompanied by comments about the high threatened penalties (punishments). In this manner, the legislator tries to have a preventive effect on persons whose intention is not to comply with tax obligations. Often at round tables or during expert comments, a clear opinion is expressed that a large number of criminal acts, due to the importance of the goods that are protected by their provisions, more strict sanctions should be imposed. This position is also attached to the aforementioned criminal acts, regardless of the amount of the threatened sanction provided for by the positive legislation.

Research - methodology

In the article, the authors used the historical method, the method of legal-theoretical analysis and the quantitative method. The study in the article uses a quantitative research approach suitable for providing statistically significant analyzes based on survey data.

The study subject is the possibilities and factors that affect the ensuring compliance with tax obligations. The authors collected the data through a voluntary survey conducted in the period from April 1, 2024 to May 25, 2024, during personal contacts with students of basic academic studies – programs: Law; Business economics and entrepreneurship; and Finance, Banking and Insurance where the surveys were distributed. Posed conditions were: the students must be in the third or fourth year of studies and ought to have basic knowledge of the tax system, and the law student must have passed the criminal law exam. Data collection was carried out using a structured questionnaire. During the research, the authors evaluated the validity of the instrument through its construct validity using confirmatory factor analysis.

Hypothesis

Although the public (individuals and legal entities) partly fulfills its tax obligations, it is necessary to see the impact of certain factors on ensuring compliance. The following study hypotheses were set:

H1: Attitude towards compliance has a positive and significant effect on tax awareness.

H2: Tax awareness has a positive and significant impact on behavior in accordance with tax regulations.

H3: Tax morality has an effect on increasing tax compilance.

H4: Subjective norms have a positive and significant influence on behavior in accordance with tax regulations.

H5: Simplification of legal regulations has an impact on tax awareness and settlement of tax obligations.

H6: The introduction of tax fairness would affect the increase of the tax liability.

H7: Tightening the penal policy would ensure more regular settlement of tax obligations and greater protection of the state, i.e. public revenues, and thus the budget.

Research results and Discussion

Tested hypotheses and survey results indicate the importance of individual factors as well as the overall effects of various factors on the taxpayers behavior. The surveyed students answered affirmatively or negatively about the validity of the factors that influence compliance with tax obligations. The results of the survey, in which participated 100 students, are shown in the following table:

Table 2: *Tax influencing factors*

No.	*Factors*	*Result*	
		positive	*negative*
1	Attitude towards compliance has a positive and significant impact on tax awareness.	57%	43%
2	Tax awareness has a positive and significant impact on behavior in accordance with tax regulations.	75%	25%
3	Tax morale has an impact on increasing the fulfillment of tax obligations.	51%	49%
4	Subjective norms have a positive and significant impact on behavior in accordance with tax regulations.	62%	38%
5	Simplification of legal regulations has an impact on tax awareness and settlement of tax obligations.	100%	0%
6	With the introduction of tax fairness would affect the increase of the tax liability.	95%	5%
7	Tightening the penal policy would ensure more regular settlement of tax obligations and greater protection of the state, i.e. public revenues, and thus the budget.	98%	2%

The results obtained by the survey in a higher percentage show a positive relationship of the offered factors in relation to the tax. The results of the study will not be presented through the percentages – they are evident from the table itself, but through the discussion of hypotheses developed on the survey results basis and oral consultations with the surveyed students.

Hypotheses 1 and 2 are confirmed – The intertwining of factors mentioned in hypotheses 1 and 2 lead to their joint consideration. Attitudes towards tax compliance play a significant role in increasing tax awareness and taxpayer behavior in terms of tax liability, which affects tax awareness as an important intermediary between awareness and compliance, and ultimately leads to behavior in accordance with the tax regulations.

Hypothesis 3 was confirmed – Encouraging tax morality through incentive positive attitudes towards compliance with tax obligations through educational campaigns and using social norms to improve tax awareness leads to exceptionally favorable results.

Hypothesis H4 was confirmed – Positive attitudes about compliance with the tax obligations of individuals and their awareness, as well as the influence of subjective norms on their tax awareness, support the idea about the need for social response and influence on individual behavior.

Based on the results, the hypothesis H5 was confirmed - The influence of indirect factors on tax compliance through the tax awareness of taxpayers emphasizes the mediating role of tax knowledge in relation to regulations. A positive stance of the need to comply with legal norms, and, for these reasons, an increase in the perceived simplicity of tax laws in order to reduce the obstacles that make it difficult to apply and comply with the law by providing clear information and instructions to taxpayers was established. Simplifying tax regulations to make them more comprehensible to everyone can significantly increase the awareness and understanding of taxpayers, thereby promoting higher rates of tax compliance.

Hypothesis HP 6 – Perception of fairness emphasizes the importance of harmonizing the taxpayer perceptions and the tax system fairness, which simultaneously encourages compliance with tax obligations and taxpayer willingness to fulfill their obligations on time, determined in accordance with their capabilities.

Hypothesis 7 has been confirmed - The penal policy tightening definitely gives a result, although not to the expected extent.

Focusing on these key factors and confirmed attitudes, as well as social and legal norms, even norms of a natural character, can represent the basis for the effective development strategy of primarily voluntary compliance with tax obligations by existing and future taxpayers.

This important approach of raising the taxpayer awareness and preventive response through education and training are the basis of legal regulations compliance, and thus the possibility of achieving the goal of ensuring compliance with tax obligations, with the ultimate, or perhaps better said primary, goal of the state - having a constant flow of income, i.e. stable public income for the purpose of settlement the needs of society through the public expenditures.

For closer clarification and confirmation of the article hypotheses and the goal itself, the discussion will present the crucial essence of the article – ensuring voluntary tax payment and non-compliance with tax payment.

Ensuring voluntary tax compliance

All around the world, undoubtedly, a difficult govermental task is ensuring tax compliance. Even the most developed countries and those in development, suffer from low tax liability (Al-Zaqeba, Al-Rashdan, 2020). In order to ensure tax compliance, the nessesity of complying with this kind of obligations is more than obvious. Tax compliance means reporting income in a manner prescribed by the law and paying taxes in an exact amount of money within the stipulated period (Devos, 2014).

According to some researchers, an important role in increasing the tax liability can be played by the so – called tax fairness – proportionality of collected taxes in accordance with the capabilities of taxpayers. This position is founded on the opinion that taxpayers will comply with tax regulations, even without repressive and prescriptive provisions, if they believe that the tax system is fair and if taxes are levied in accordance with their financial situation. We are of the opinion, according to certain tax studies (Toregler, 2005), that tax fairness does not affect the rate of tax compliance. On the other hand, tax fairness viewed as an obligation for those with higher incomes that should pay higher rate taxes can be fundamentally unconstitutional, given that the constitution guarantees „equality for all“.

Numerous empirical evidences have confirmed that tax morality has a great influence on ensuring tax payment. Tax morality should be seen as an innate incentive to obey the law and pay taxes in order to contribute voluntarily to the implementation of public goods. Individuals who have a strong perception of a moral duty to fulfill tax obligations, tend to have a higher intention to comply with tax rules, and see the tax contributions as part of a social contract to support public services and infrastructure provided by the government (Punomo, 2024). This behavioral intention, in accordance with the regulations, is related to the influence of trust in the government and the perception of the fairness of the tax system.

Possibilities and factors for improving tax security

Ensuring tax compliance is facing task for the state apparatus, especially due to the numerous obstacles encountered and the nature of their existence and operation. Tax compliance is a critical factor for governments around the world, as it directly affects the revenue necessary for developement of public services and infrastructure (Fadhilatunisa, 2024). The generally complicated nature of behavior in accordance with tax obligations leads to the necessity of integrating moral obligations and perceived fairness.

We believe that the following options should be used to increase the awareness of tax payment and the taxpayer compliance, in order to improve the security of tax payment:

- strengthening of positive attitudes towards tax compliance,
- use of social norms,
- simplification of tax laws,
- existence of moral obligations, perceived fairness and trust in government identified as predictors of behavior in accordance with the tax obligations.

It is also worth mentioning the fact that a large amount of valuable informations containing valuable financial aspects is channeled to the Tax Administration, but in many cases with sensitive information from a wide range of public and private entities, so the question of protecting the privacy of individuals is raised. This protection should be the concern of the Tax Administration, which must create a sense of security among taxpayers, and for this purpose, take care of the protection of the same information and the fact that it must provide the same to tax auditors in an adequate manner (Stasinopoulos, 2024).

Few studies have examined the factors that can improve tax, most of the reviewed studies have found that tax knowledge and tax attitude are common. Nor we should neglect the fact that existing studies as well as legal regulations predominantly focus on the general taxpayer population, ignoring the unique characteristics and determinants relevant to individuals who have yet to fully engage in the tax system.

Also, we should not ignore the policy knowledge and economic factors that play a key role in determining the level of tax liability in small and medium-sized enterprises (Mulyo, 2024). On the other hand, criminal proceedings due to tax evasion sanctioning are not always economically optimal, because, as Slemrod states above a certain point, the cost of implementing tax laws exceeds the revenues achieved (Slemrod, 2007), which is not acceptable from a legal point of view.

Tax evasion, a global concern, undermines government revenues, public services and societal trust (Lorato, 2024). Tax evasion often carries negative publicity and contributes to the unfavorable social perception of the tax officials (Qomariah, 2024) as well as to the damage that in recent years amounted to over eighty billion dinars.

Taxpayers' perceptions of tax evasion are largely related to the existing legitimacy of the government. Accordingly, understanding the specific determinants of tax evasion attitudes, including government legitimacy, is critical to creating effective tax policies and enforcement strategies. The presence of this negative social phenomenon in the Republic of Serbia indicates current strategies insufficiency and legal solution. This primarily refers to the detection of various forms of tax evasion, which can most often be encountered in the calculation of VAT, the most plentiful income of the state budget, as it accounts for a total of 80% of the total tax income. This is another confirmation of the need for strengthening the tax discipline in the public sector, which would prevent the crime of tax evasion. It is also necessary to mention Serbia's long-standing tendency to „join" the European Union, which additionally requires the adaptation of our country's legal regulations to EU regulations, as well as a different approach to tax policy and strategies for its application. We should not ignore the practice of the courts, which to the greatest extent, despite the "strict prescribed sanctions" according to some understandings, impose milder punishments and, in most cases, conditional sentences.

In addition to the above mention, we could summarize that recommendations are: improving the efficiency of the implementation of tax laws, simplifying legal norms, considering that simplifying of the payment process is only the foundation of modern and efficient business, intensifying the education program of legal entities and providing incentives to all persons who respect the tax system by respecting their tax obligation.

Conclusion

Compliance with tax obligations is a multifaceted issue that is influenced by various psychological, social, and economic factors, as well as the influence of criminal law protection of tax payment security. This multi - sided approach emphasizes the necessity of comprehensive strategies that go beyond mere punitive measures as unified strategy.

Compliance with tax obligations is based on two motivations of taxpayers: forced compliance and voluntary compliance (Kirchler, 2007). Increasing the intention to comply with tax obligations and tax compliance can be influenced by tax simplicity, tax justice and tax morality, which provide a more holistic understanding of the behavior of taxpayers before application of legal coercion. It is definite that tax compliance increases if the taxpayer has a high moral value, because morality is an attitude that encourages individuals to behave in accordance with the provisions and have a positive form of action. Such behavior, with the help of simplified and comprehensible regulations, would contribute to compliance with tax rules and regulations and would avoid the commission of illegal acts and the application of sanctions prescribed by the legislator in case of non-compliance or „avoidance" of tax obligations. Tax evasion, which represents a challenge for the economy, should be mentioned here, although taxation is necessary to maintain a state that protects the freedom of individuals or society, that is, individual and collective freedom, an ineffective tax system can serve as an obstacle to economic activity, thus affecting the market balance.

In this sense, the law methods and economics serve as a valuable tool for understanding tax evasion as an economic phenomenon and as a basis for planning a prevention strategy of tax evasion, both from a criminal and economic, sociological and psychological point of view. We can summarize: in the Republic of Serbia, tax morality is very low because most people think that tax evasion is normal and justified. For all the reasons mentioned above, there is an inevitable and justified need for the tax authorities to apply all available measures and instruments that will affect the reduction of tax evasion.

Practice has shown that „small" taxpayers primarily pay their tax obligations with the smallest possible deviations in payment terms (certain payment quarters), thus complying with the law provisions, primarily doing so to avoid the risk of fines and even criminal sanctions. In one, we would say, smaller part of taxpayers, the psychological perspective changes, and the respect of the taxpayer is not based only on a forced foundation, but also on a voluntary motivational basis. We cannot fail to mention the „big taxpayers" who are obviously placed on a pedestal by having greater privileges and tax breaks compared to the „small taxpayers".

By implementing the factors and suggestions that we mentioned in the article, based on educational programs and spreading tax awareness and morality, as well as simplifying legal regulations, tax authorities can increase the compliance rate and thus act preventively in the direction of reducing the need for coercive measures. By accepting the views of the authors in the article discussion and the proposed possibilities, we believe that the efficiency of the tax system will ultimately increase.

Overall, we would agree with Slemord, who, in his book The Economy of Tax Evasion cites the behavior of taxpayers with a tendency or decision to comply with the law when they plan to do so.

This is the reason for the need of ensuring tax compliance approach, both from the law, thus legislation, and from the psychological point of view, for the purpose of economic benefit of the social community.

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Abstract

Tekst apstrakta na engleskom ili na nekom drugom jeziku…

Key words:

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Текст (Font size 10)……...

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