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Show cave websites in Serbia: Evaluation and potential improvements

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Abstract: Show caves and speleotourism can have a major impact on the tourism industry as well as the local and regional economic development. Promotion is a crucial aspect of generating plans and strategies for tourist caves. In the case of speleotourism, promotion needs to be professional, attractive and continuous because caves are often considered to be dangerous and inaccessible places. The main goal of this paper is to determine the quality of official show cave websites in Serbia. The assessment included the application of modified Website evaluation model. Website design techniques were also assessed, including the performance and the degree of optimization for search engines SEO. The results show extreme deficiencies and weaknesses regarding the level of internet promotion of Serbian show (tourist) caves. These results are of great importance for cave management teams and tourist organizations because they point out the negative factors of cave promotion in Serbia that need to be revised.

Keywords: show caves, website assessment, speleotourism, tourism promotion

JEL classification: L83, Z32, M31

Veb-sajtovi turističkih pećina u Srbiji: Evaluacija i potencijalna poboljšanja

Sažetak: Pećine i speleoturizam mogu imati veliki uticaj na turističku industriju, kao i na lokalni i regionalni ekonomski razvoj. Promocija je ključni aspekt izrade planova i strategija za turističke pećine. U slučaju speleoturizma, promocija mora biti profesionalna, atraktivna i kontinuirana, jer se pećine često smatraju opasnim i nepristupačnim mestima. Osnovni cilj ovog rada je da se utvrdi kvalitet zvaničnih veb-sajtova turističkih pećina u Srbiji. Procena je obuhvatila primenu modifikovanog modela ocenjivanja veb-sajtova. Takođe su procenjene tehnike dizajniranja veb-sajtova, uključujući performanse i stepen optimizacije za SEO pretraživač. Rezultati pokazuju krajnje nedostatke i slabosti u pogledu nivoa internet promocije turističkih pećina. Ovi rezultati su od velike važnosti za upravljačke strukture i turističke organizacije jer ukazuju na negativne faktore promocije pećina u Srbiji koje treba revidirati.

Ključne reči: izložbene pećine, procena veb stranica, speleoturizam, promocija turizma

JEL klasifikacija: L83, Z32, M31

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1. Introduction

The Internet has a major impact on the tourism market and it can be used productively for economic development. Promotion, product distribution and research functions play an important role in tourism modernization (Jovičić, 2019). The application of advanced technologies for tourist affirmation can significantly transform the tourist and economic state of a particular area. Information technology has proven to be an effective tool for creating prosperous and economically sustainable destinations (Kamperman Sanders et al., 2018).

Information and communication technology allow tourism workers and tourists to easily contribute their thoughts, opinions and creations to the Internet. Tourism workers can implement various marketing strategies for their products, while consumers can obtain information for the trip-planning process, destinations, accommodation, restaurants, tours, and attractions (Hays et al., 2013). This use of technology creates multiple ways of promoting tourist sites, which are completely dependent on the success of marketing strategies.

As the demand for tourism services in natural areas has increased, many management structures have recognized a potential for adding complementary sites to tourism supply. This is particularly important for areas that are not currently attractive destinations (Palmer & Bejou, 1995). This is often the case with geoheritage sites, which possess a satisfactory level of tourism potential. Particularly valuable geoheritage sites are caves, that serve as the nucleus for the emergence and development of speleotourism. Arranging a speleological object for tourism purposes includes complex multidisciplinary activities and it requires modification of the unwelcoming raw underground space (Garofano & Govoni, 2012). Moreover, show cave management must continuously apply adequate marketing strategies to attract as many tourists as possible.

The promotion of show caves is particularly specific and important, as some caves can be inaccessible and dangerous places (Walker, 2007). Therefore, the Internet tourist promotion of caves may be crucial for tourists when choosing a destination. Furthermore, good quality promotion of the cave is equally important for management structures as it brings a professional, responsible, modern and sustainable way of tourism business. The interpretation of show caves is a very important aspect of karst management and sustainable development of geotourism and cave tourism. “The explanation of the speleological, geological, geomorphological, and archeological values of caves can help visitors understand and appreciate their significance and the importance of their protection for future generations” (Beraaouz et al., 2019).

Previous studies on speleotourism in Serbia (Antić, 2018; Antić et al., 2019; Petrović, 2005; Tomić et al., 2019; Vuković & Antić, 2019) determined the solutions for better positioning of caves on the national tourism market. The conducted research aims to show the current state of the internet promotion of tourist caves, as well as the possibilities of improving and modernizing speleotouristic promotion in Serbia. The evaluation analysis in this paper shows significant differences between Serbian caves and Postojna Show Cave (Slovenia) in terms of internet promotion and Website quality. For the purposes of this research, two caves in Serbia and one in Slovenia were singled out. Since only the Ceremošnjja and Resava show caves (Figure 1–a,b) have official websites (www.resavskapecina.rs/site; www.ceremosnja.com), these caves have been evaluated via the modified Website Evaluation Model. As a case study from Slovenia, the Postojna show cave was assessed (Figure 1–c), which is a very important speleological object on the international tourist market. These results are important for managers and tourism organizations in charge of cave

management and speleotourism development, as they indicate deficiencies that need to be revised in order to reach a higher level of internet promotion quality.

2. Tourism websites

The maximum utilization of information technology for the purposes of tourism development involves the application of creative and practical methods in order to achieve a quality promotion of all tourist attractions. Even if a tourist attraction does not have great aesthetic value, with a well-prepared promotional strategy it can achieve competitiveness in the market (Papadopoulos & Heslop, 2014). This is often very important for management structures dealing with the natural tourist sites, which are not easily accessible to visitors.

Quality promotion can encourage adventure and recreational activities (Vyas, 2019), but it is of great importance to provide all the necessary information to avoid certain consequences (tourist complaints, lawsuits, negative image, etc). Without the implementation of quality promotional strategies, the advancement of tourism products cannot be expected (Liu & Li, 2019). Websites and Social media are the ideal channels through which customers' interaction with a tourist site is inspired (Ioanna & Youla, 2012).

The Internet has increased and improved the consumption of tourist information; users reach the virtual world with full satisfaction in search of everything they need to arrange and carry out their journey. Furthermore, it is evident that tourist organizations recognized the value of getting their own official website, which enables them to display information about destinations online. As a result, websites for institutional tourism have become important networking platforms that deliver a lot of knowledge (Gómez-Martín et al., 2017). That is why it is necessary to carefully consider the content and information that is displayed on the Internet related to tourist destinations.

“Tourism website has the capacity to operate on multiple levels through communication that interacts with prospective visitors, to build valid expectations, protect the destination and built landscape and heritage narrative in the earliest stage of the tourist experience” (Krisjanous, 2016, p. 5). Therefore, the greater the extent of communication and business transactions, such as orders and purchases, on tourism websites, the more likely is for tourist organizations to turn a potential tourist into a real tourist (Cao & Yang, 2016). This is a significant capability for tourist organizations, which can be used effectively for sustainable economic growth.

3. Caves and speleotourism

The karst environments include unique landscapes (Wozniak et al., 2017), surface (limestone pavement, sinkholes, cove, karst fields) and underground (caves, pits) karst formations (Ford & Williams, 2007) which are visited by many tourists. A rather unique, attractive and often economically viable form of tourism, originating from the karst regions is speleotourism (Lazarević, 2000).

Speleotourism in some parts of the world provides extremely high economic results (Postojna Cave, Slovenia; Mammoth Cave, Kentucky, USA; Altamira Cave, Spain; Lascaux Cave, France, Neptune Cave, Italy and others). However, these caves have international significance because of their unique geomorphological or anthropogenic attractiveness (cave painting, speleo-archeology, etc.) and it is not easy for other caves to reach such a high level of attractiveness or visitor numbers and match and become competitive on the global speleotourism market.

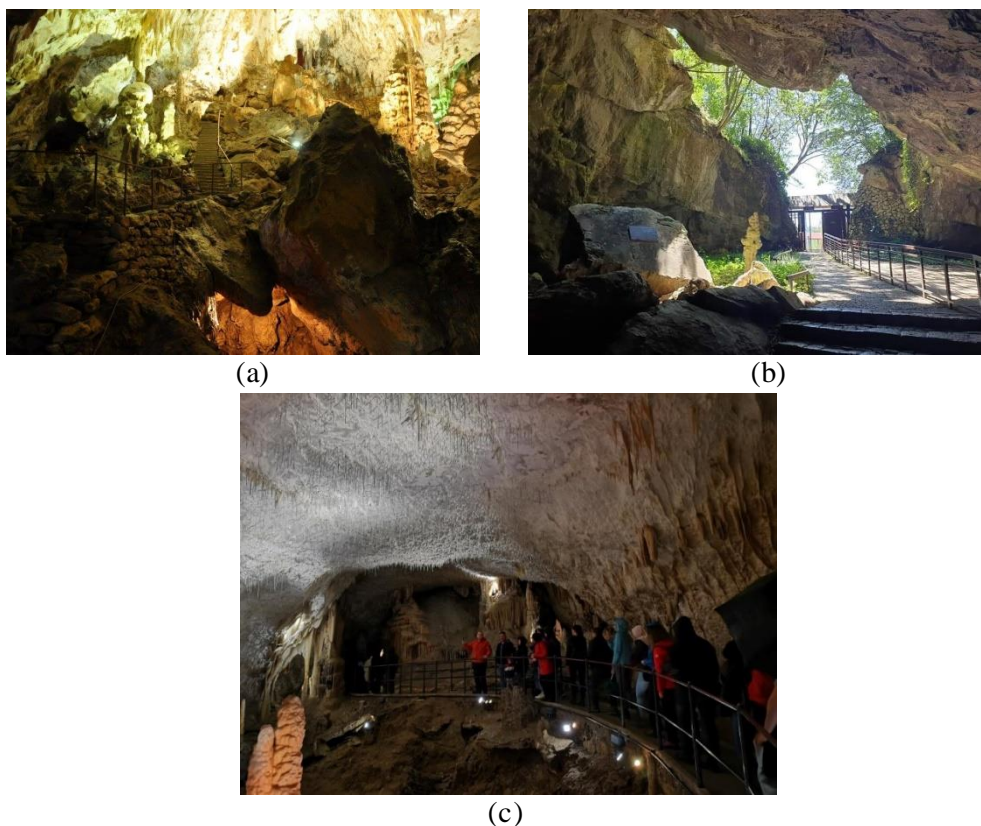
The importance of show caves is reflected in their purpose, i.e. the reason for the visit. According to (Cigna, 2016), the largest number of visitors visit caves as tourists, followed by religious reasons, while the economic performance is greatest by tourists and visitors who come for health reasons.

Certainly, the attractiveness of caves does not have to be directly related to the rich tourist infrastructure. Increasing the number of tourists can be achieved by maintaining the natural appearance of the caves, for which caves in Slovenia, such as Postojna Cave and Škocjan Cave, are known (Tičar et al., 2018). The importance of these caves is great and therefore promotional strategies based on sustainable principles should be implemented.

In contrast, in the area where the Agu-Owuru cave is located, tourism is poorly developed and improvements in tourism infrastructure are a good step for attracting visitors. In addition, promotion through traditional and modern media and involvement of the local population is proposed. An important success factor is the level of knowledge of the local population about ways of promoting the tourist offer (Okonkwo et al., 2017).

Some caves have a great religious significance, which is one of the circumstances that should be taken into account during the promotion. For Batu Caves (Kuala Lumpur), promotion through religious rituals and other events that will best present the significance of these caves to potential tourists is suggested (Musa et al., 2017). Also, to increase the number of visitors, it is necessary to use the potential and uniqueness of the Thaipusam celebration through marketing activities (Arasi Paniandi et al., 2018).

Figure 1: Explored show caves



Source: (a) Ceremošnjaja show cave (Author's own); (b) Resava show cave (Author: Damira Ilić); (c) Postojna show cave (Author's own)

The awareness of local communities about natural tourist values is also important, especially in the case of Ajalli cave (Nigeria) where a certain part of the population does not know that the cave exists at all. In order for the cave to be presented in an adequate way, it is necessary to engage tourist guides. However, the financial problem is the limiting circumstance of the development and promotion of this cave and therefore it is suggested to invite stakeholders to help implement the development strategies (Oguamanam & Nwankwo, 2015).

The development of geoheritage, such as caves, needs to be approached individually, first because of the location (country or region) in which it is located, then the level of tourist development and tourist potential. An analysis of the current state of show caves is necessary to understand the shortcomings of promotion.

Caves in Serbia do not have a high international character, but they do attract tourists to some extent. In 2018, the Resava Cave (Eastern Serbia) was visited by almost 60,000 tourists (data from the Public Company “Resava Cave”), and the following year, Hadži-Prodanova Cave near the city of Ivanjica, was opened to visitors. Currently, ten show caves are active in Serbia, and those are: Resava, Rajkova, Ceremošnja, Ravništarka, Risovača, Stopić, Podpečka, Lazareva, Bogovinska and Hadži-Prodanova. Several other caves have some infrastructure (pedestrian tracks and stairs) and are accessible to tourists through travel agencies, which offer adventure and extreme tours. These caves are: Ledena, Petnička, Vernjikica, Prekonoška and Cerjanska. For these caves, it is usually necessary for tourists to announce their visits. Visits must also be announced in some caves that are permanently open to visitors (details are shown in Table 1). Overall, speleotourism in Serbia is still at a low level with the majority of visitors being domestic tourists, mainly school children visiting these sites as a part of their yearly school trips.

Table 1: General overview of current show cave promotion in Serbia

Show Caves	Cave Management Structures	Official Websites	Information about Working Hours	Information about Tickets	Cave Photos	Cave Videos (Virtual Tours)	Show Cave Maps
Resava Cave ¹	Public Company Resava Cave	http://resavskapecina.rs/site/	+	+	+	+	-
	Tourist and Sports Organization of Despotovac Municipality	http://www.resava-tourism.rs	-	-	-	-	-
Ceremoša Cave ^{1,2}	Ceremošnja Restaurant	http://www.ceremosnja.com/	-	-	+	-	-
	Tourist Organization of Kučevo Municipality	https://www.tokucevo.org/	-	-	+	-	+
Ravnišćarka Cave ²	Tourist Organization of Kučevo Municipality	https://www.tokucevo.org/	-	-	+	-	+
Rajko Cave	Tourist Organization of Majdanpek Municipality	http://www.toom.rs/	+	+	+	-	-
Lazar Cave	Tourist Organization of Bor	http://tobor.rs/	+	+	+	-	-
Risovača Cave	Tourist Organization of Aranđelovac Municipality	https://www.bukovickabanja.rs/	+	+	+	-	-
	Community Museum of Aranđelovac	https://www.nmar.rs/	+	+	+	-	-
Stopića Cave	Tourist Organization of Zlatibor Mountain	http://www.zlatibor.org.rs/sr/	+	+	+	+	-
Podpečka Cave ²	Tourist Organization of Užice	https://www.turizamuzica.org.rs/	+	+	+	-	-
	Tourist Organization of West Serbia	http://www.westsrbia.org/	+	-	+	-	-
Hadži-Prodanova Cave ²	Tourist Organization of Ivanjica Municipality	https://ivatourism.org/sr-yu/	+	+	+	-	-
Ledena Cave ²	Tourist Organization of Zlatar	https://www.zlatar.org.rs/	-	-	+	-	-
	Uvac Nature Reserve	http://www.uvac.org.rs/	-	-	+	-	-
Bogovinska Cave ²	Tourist Organization of Boljevac Municipality	https://tooboljevac.rs/	-	-	-	-	-
	Regional Development Agency Eastern Serbia	https://www.visiteastserbia.rs/	-	-	+	-	-
Mermerna Cave ³	/	/	/	/	/	/	/

Notes: ¹ Show Caves that have their own websites; ² A visit to the cave must be announced in advance; ³ The cave is located in the disputed territory of Kosovo and Metohija; + Included; - Not included

Source: Author's research

4. Methodology

Our assessment included the implementation of the Website Evaluation Model (Table 2). This method was developed by Li et al. (2016) and it includes 33 attributes organized in 5 dimensions: Communication—COM (n = 8 attributes), Site Attractiveness—SAT (n = 2 attributes), Marketing Effectiveness—MKT (n = 4 attributes), Technical Setup—TEC (n = 5 attributes), and World Heritage Specifics—SPE (n = 14 attributes). Attributes were scored using three types of scales (presence/absence; 2 point; and 3 point) totaling a maximum of 39 points; scale points were distributed as follows: COM (range = 0–11; mid-point = 5.5); SAT (range = 0–4; mid-point = 2.0); MKT (range = 0–4; mid-point = 2.0); TEC (range = 0–6; mid-point = 3.0); and SPE (range = 0–14; mid-point = 7.0).

For the purposes of this study, the Website Evaluation Model was modified; COM and SAT were used as main values, while MKT and TEC were used as additional values. Since none of the caves in Serbia is recognized as World Heritage Sites, the SPE has not been analyzed. However, the last three attributes from the SPE (Visual tour, Events calendar, Photo Gallery) were placed in SAT in order to better evaluate the site attractiveness.

The summation of COM and SAT represents the main values (MV), while the summation of MKT and TEC represents the additional values (AV). This can be derived into two simple equations:

$$\text{COM} + \text{SAT} = \text{MV} \quad (1)$$

$$\text{MKT} + \text{TEC} = \text{AV} \quad (2)$$

Additional modification in the Website Evaluation model was introduced in the form of the matrix (X axis—main values; Y axis—additional values). The matrix is divided into six fields. Depending on the final score, each website will fit into a certain field. For example, if the website’s main values are 10 and additional are 7, the website will fit into the F₁₀₋₁₂ field which indicates a moderate main and high additional values.

- Field F₅₋₆ represents low main and low additional values;
- Field F₅₋₁₂ represents moderate main and low additional values;
- Field F₅₋₁₈ represents high main and low additional values;
- Field F₁₀₋₆ represents low main and high additional values;
- Field F₁₀₋₁₂ represents moderate main and high additional values;
- Field F₁₀₋₁₈ represents high main and high additional values.

Table 2: Modified Website Evaluation Model

Attributes by dimensions	Evaluation scales		
Main Values			
Communication—COM (8 attributes; maximum score = 11)			
Online customer service	(0) No	(1) Yes	
Readability	(0) Highly educated adult reading level		
	(1) Literate adult reading level		
	(2) All reading levels		
Contact information	(0) No	(1) Yes	
Links to social media	(0) No	(1) 1 or 2	(2) 3 or more
Multiple language versions	(0) Native language only		
	(1) 1 or 2 foreign languages		
	(2) 3 or more foreign languages		

Electronic newsletter	(0) No	(1) Yes	
Feedback form	(0) No	(1) Yes	
Surveys or polls	(0) No	(1) Yes	
Site Attractiveness—SAT (5 attributes; maximum score = 7)			
Visual appearance	(0) Text only		
	(1) Limited visual appeal		
	(2) Good visual appeal		
Webpage design	(0) No layout/design		
	(1) Limited layouts/designs		
	(2) Multiple layouts/designs		
Visual tour	(0) No	(1) Yes	
Events calendar	(0) No	(1) Yes	
Photo Gallery	(0) No	(1) Yes	
Additional Values			
Marketing Effectiveness—MKT (4 attributes; maximum score = 4)			
Tourism amenities/services	(0) No	(1) Yes	
Directions or maps	(0) No	(1) Yes	
Local Weather	(0) No	(1) Yes	
Commercial Companies links	(0) No	(1) Yes	
Technical Setup—TEC (5 attributes; maximum score = 6)			
Logic Structure	(0) No	(1) Yes	
User-friendly interface	(0) Low navigation	(1) Moderate navigation	(2) Efficient navigation
Link workability	(0) No	(1) Yes	
Site map	(0) No	(1) Yes	
Privacy policy	(0) No	(1) Yes	

Source: [Li et al., 2016](#)

Selected attributes of the website design technique were also assessed, including the performance and the degree of optimization for search engines SEO. The tests were performed using selected internet applications ([Król & Zdonek, 2020](#)). In addition, Google’s mobile friendliness test and Google lighthouse best practices audit was performed ([Giannakouloupoulos et al., 2019](#)).

5. Results and discussion

The websites were characterized by relatively good performance, with the highest values of performance indicators recorded for the ‘ceremosnja.com’ website (Table 3). At this point, however, it is worth noting the slightly worse performance of websites on mobile devices.

There has been a relatively high potential for website optimization for search engines SEO (Table 4). SEO is a complex phenomenon, so detailed tests are necessary to detect SEO attributes that need improvement.

All the researched websites were adapted to mobile devices. They differed in the speed of loading in the web browser window, with the best values of this attribute recorded for the ‘ceremosnja.com’ website (Table 5).

Generally, evaluated sites were technically well prepared. However, it is necessary to conduct detailed tests that will indicate critical points that require improvement, e.g. in the area of SEO and performance.

Table 3: Performance test results

Website	PageSpeed Insights ¹ (mobile/desktop)	Gtmetrix ² (PageSpeed Score/YSlow)	Pingdom Website Speed Test ³
resavskapecina.rs	66/78	82/71	79
ceremosnja.com	91/99	86/73	82
postojnska-jama.eu	52/75	85/77	73

¹<https://developers.google.com/speed/pagespeed/>; ²<https://gtmetrix.com/>; ³<https://tools.pingdom.com>
 Source: Author's research

Table 4: SEO test results

Website	ZADROWeb ¹ (Score)	WebsiteGrader ²	SunriseSystem ³ (SEO Rating)
resavskapecina.rs	63.55	54	50
ceremosnja.com	59.81	57	39
postojnska-jama.eu	66.36	57	84

¹<https://zadroweb.com/seo-auditor/>; ²<https://website.grader.com/>; ³<https://www.sunrisesystem.pl/audyt-seo>
 Source: Author's research

Table 5: Selected quality indicator test results

Website	GTmetrix Fully Loaded Time ¹ (s)	Google Mobile- Friendly Test ₂	Pingdom load time ³ (s)	Lighthouse Speed Index (s)
resavskapecina.rs	4,2	1	3,03	6,5
ceremosnja.com	1,8	1	0,37	1,0
postojnska-jama.eu	8,1	1	2,42	4,3

¹<https://gtmetrix.com/>; ²<https://search.google.com/test/mobile-friendly/>; ³<https://tools.pingdom.com>
 Source: Author's research

Based on this analysis it can be concluded that the technical aspect of the Serbian show cave websites is good, but the content quality is very poor. According to the research of Tomić et al. (2019), the most important elements for Serbian speleotourists are tour guide service, visitor centers, interpretive panels and promotional activities. These factors need to be the primary focus of further speleotourism development. At the moment, caves in Serbia usually play the role of additional attractions that are included in other tourist offers. In the future, it would also be beneficial to create a unified speleoroute which would connect all the show caves in Serbia into a unique speleotourism product attractive for a larger number of both domestic and foreign tourist markets. Before designing and implementing this route, it is necessary to work on the show cave arrangement, as well as constructing additional tourist infrastructure and engaging in better promotional activities.

The only two caves in Serbia that have the official website are Resava and Ceremošnja show caves. These websites were taken as examples for a thorough evaluation and comparison with the Postojna Cave website, which has also been evaluated. Table 6 contains all the scores of Resava, Ceremošnja and Postojna cave websites, according to the modified website evaluation model.

The results vary greatly. Almost all attributes are rated differently. The communication values of the Resava Cave and Ceremošnja Cave websites are very low. Only the readability and presentation of the contact information is positively rated. Other communication attributes are missing, unlike Postojna, which has maximum values for all attributes except

feedback forms and surveys. The attractive value of websites has also been evaluated differently. Postojna has maximum values of attractiveness, while Resava and Ceremošnja were evaluated with lower ratings, especially for the visual tour, which is not available on both websites.

Additional website values of Postojna cave were rated with maximum values, while the Resava cave website received 2 points and Ceremošnja cave website received 0 points, out of 10 for the same values. Marketing effectiveness values include having a site map and links to local companies, which are the only attributes that the Resava cave website has. The lack of ticket purchase or reservation option and not displaying the local weather forecast are major flaws that need to be revised. The absence of additional values of the Ceremošnja cave website indicates a clear lack of factors that complement the website and help potential tourists to organize their visits more easily.

Table 6: Website evaluation

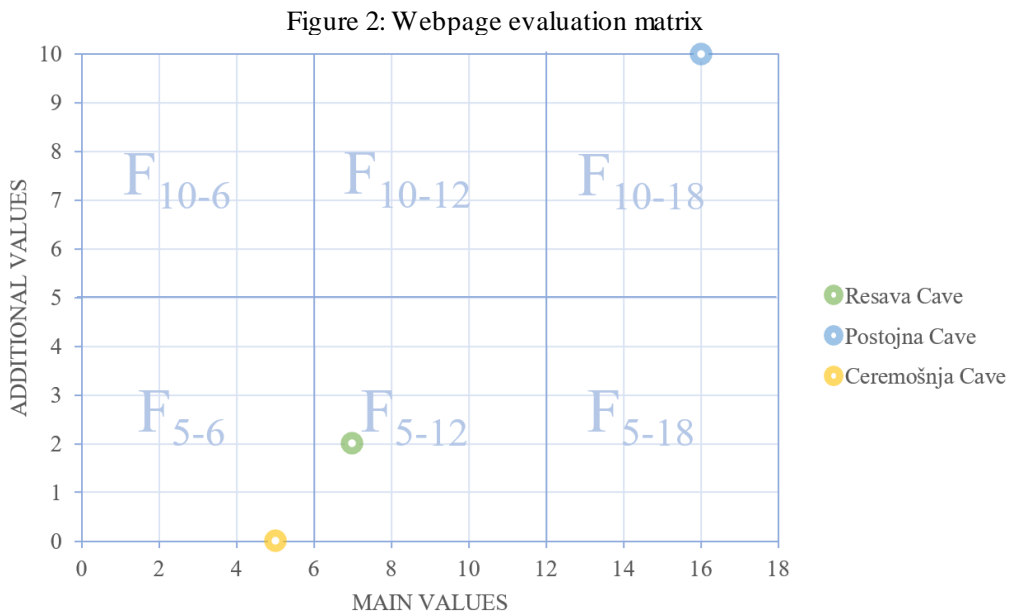
Attributes by Dimensions	Scores		
Main Values	Resava Cave (Serbia)	Ceremošnja Cave (Serbia)	Postojna Cave (Slovenia)
Communication—COM			
Online customer service	0	0	1
Readability	2	2	2
Contact information	1	1	1
Links to social media	0	0	2
Multiple language versions	0	0	2
Electronic news letter	0	0	1
Feedback form	0	0	0
Surveys or polls	0	0	0
Site Attractiveness—SAT			
Visual appearance	1	1	2
Webpage design	1	0	2
Visual tour	0	0	1
Events calendar	1	0	1
Photo Gallery	1	1	1
Total	7	5	16
Additional Values			
Marketing Effectiveness—MKT			
Tourism amenities/services	0	0	1
Directions or maps	1	0	1
Local Weather	0	0	1
Commercial Companies links	1	0	1
Technical Setup—TEC			
Logic Structure	0	0	1
User-friendly interface	0	0	2
Link workability	0	0	1
Site map	0	0	1
Privacy policy	0	0	1
Total	2	0	10

Source: Author's research

The technical structure of the Resava and Ceremošnja websites is also completely non-competitive with the Postojna website, which is much more user-friendly, and it possesses a

site map. The lack of other indicators should also be mentioned, including: social media links, the ability to use other languages and local weather forecast.

The final results of the Modified Website Evaluation Model are shown in the matrix (Figure 2). Resava cave is positioned in the field F_{5-12} , representing the moderate main and low additional values, while Ceremošnja cave is positioned in the field F_{5-6} , which represents low main and low additional values. Postojna cave is positioned in the field F_{10-18} , representing the high main and high additional values. The large difference in values is evident and indicates the very low quality of promotional speleotourism activities in Serbia. In addition, it is important to note that the lack of websites of other show caves in Serbia is a major disadvantage. It is necessary to engage a marketing team, which would create good websites, standardized in accordance with the latest trends in the promotion of speleotourism in the world.



Source: Author's research

Furthermore, losing some of its main value attributes, Resava cave could change its position to the F_{5-6} field (same as Ceremošnja cave), thus having low main and low additional values. Urgent measures should be taken to prevent this from happening, in particular:

- Create online customer service for buying or booking tickets;
- Set links to Social Media;
- Insert multiple language versions of the text;
- Create an electronic newsletter;
- Install the virtual tour;
- Insert local weather forecast.

Besides improving the tourist promotion of caves, it is necessary to implement measures to strengthen their positions in the tourist market. Adequate sustainable development of speleotourism in Serbia must embrace a more professional approach, which would include:

- Strategic investments in the infrastructure of tourist caves;
- Tourist arrangement of caves which have the highest tourism potential (Tomić et al., 2019);
- Employment of young and educated staff;
- Development and implementation of a national strategy for the development of speleotourism; and
- Statistical monitoring of results.

It is important to suggest the limitations of this study. First of all, the number of caves used in the research is small, because only two caves in Serbia have official web presentations. Considering that the goal of the research is to analyze caves in Serbia, one cave was used for comparison, which is justifiable. The reason for such a small number of samples is the lack of official web presentation of other caves in Serbia, which is certainly a major shortcoming in the promotion and development of caves. Furthermore, the limitation is reflected in the fact that it was not possible to compare all the caves in Serbia due to the lack of web presentations. In terms of comparing caves in Serbia and Postojna Cave, the difference is primarily reflected in the level of development, tourist offer and cave management, which is another limitation of this study. Further research may include other caves in Serbia with a proposal of web presentations in relation to the offer of each cave individually.

Further steps towards modernization and improvement of show cave promotion quality in Serbia should include strengthening of speleotouristic presentations on the Internet. The Internet is a key factor in the development of quality tourism promotion and therefore, focused efforts should be made to develop the competitiveness of the explored caves. In this way, the recognition of caves and tourist affirmations can be achieved which creates economic and social sustainability for present and future generations.

Better promotion of the caves would bring management teams positive economic results while improving information content and enhancing the tourist experience for tourists. Particular attention should be paid to:

1. Establishment of an organization that would promote the caves through educational and tourism content;
2. Opening an account on all popular social media in order to actively engage in the popularization of caves for tourism purposes;
3. Actively set up discounts and opportunities for winning free tickets and, thus, attract more tourists;
4. Conduct intersectoral cooperation with local tourist organizations, national institutions and scientific institutes;
5. Constantly improve the tourist infrastructure and nurture the ecosystem of the speleological environment.

6. Conclusion

The conducted evaluation indicates the importance of quality promotion required by the management and marketing teams of show caves in Serbia in order to achieve sustainable development of speleotourism. The evaluation analysis revealed large differences between the promotional results of Serbia and Slovenia. Postojna Cave has extremely high marketing results, while caves in Serbia have negative results. This is an extremely important indicator when it comes to the Resava Cave management issues, as this show cave has the greatest potential for further development of speleotourism in Serbia. The existence of the

Ceremošnja Cave website is certainly an advantage, but the lack of good promotional quality and the poor management structure have a bad impact on tourism development. Therefore, a small number of tourists know and visit this show cave. It is necessary to create official websites for all tourist caves in Serbia, for their position on the tourist market to be more significant. In addition, the existing websites should be improved according to the existing modern trends in the promotion of speleotourism.

Show Cave Websites can significantly change the tourist identity of the caves and crucially affect the image of the destination. For that reason, it is necessary to carefully implement marketing measures in order to attract as many tourists as possible, promote science and education, as well as create a sustainable form of tourism development.

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Conflict of interest

The authors declare no conflict of interest.

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