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ASSESSMENT OF WEBSITES OF POLISH LANDSCAPE PARKS

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Abstract: The purpose of the article is to evaluate the websites of Polish landscape parks in terms of information (presence and quality) and technical aspects (loading speed, availability, responsiveness) including functional development stages. The study concerned all (125) Polish landscape parks. The research consisted in assessing the websites of landscape parks according to the adopted 37 consolidated criteria which formed the basis for distinguishing 4 stages of functional development of websites. As a result of the study, the hypothesis that Polish landscape parks do not use the full potential of modern information and communication technologies on their websites, was positively verified.

Keywords: landscape park, nature protection, tourism, websites, websites assessing criteria, sustainable development.

1. Introduction

In Poland, the Internet has been developing since December 1991 when the first computers were connected to the network (Kozłowski, 2006, p. 90). According to the Public Opinion Research Center data, in 2019 69% of adults used the Internet in Poland at least once a week, which was 21 percentage points more than 10 years ago. Internet use is common among the youngest group examined, as it was used by 100% of people aged 18-24, 99% in the group of people aged 25-34 and 90% for those aged 35-44, and in older age groups the majority using the Internet is 75% at the age of 45 to 54, and 56% at the age of 55 to 64. The average is 'understated' by the elderly – almost three-quarters of the oldest (aged 65 and older) Poles remain

offline (CBOS 2019, p. 1). In 2009, online purchases were made by one-third of Poles, compared to more than half (57%) in 2019 (CBOS, 2019, p. 8).

According to Eurostat data, in 2019 Internet access was used in Poland at least once a week, which is more than the result of a survey conducted by CBOS, i.e. 78.3% of people aged 16-74. It can be assumed that this figure will increase in the following years, moving towards the EU-27 average, which in 2019 was 86% (Eurostat, 2020).

At the same time it is worth noting that tourists intensively search the Internet to make a decision about travelling before visiting the destination (Pesonen and Pasanen, 2017; Höpken, Eberle, Fuchs, and Lexhagen, 2018). In Poland this was confirmed by a study carried out by Kantar, which shows that as many as 78% of all respondents derived ideas for tourist trips from the Internet, and which for 92% was the place to look for accommodation (Kantar, 2019).

The subject literature indicates that an Internet presence is what destinations and tourist operators must focus on (Castañeda, Frías, and Rodríguez 2007; Tham, Croy, and Mair, 2013). Due to the high availability and wide range of Internet impact, having a properly constructed and constantly updated website has become for large protected areas one of the basic tools for communication with potential visitors (Eagles, Mccool, Haynes, 2002, p. 17; Hennig, Vogler, and Möller, 2013).

In Poland, protected areas are frequently visited by tourists, as exemplified by the national parks, which were visited by 14 million people in 2018 (GUS, 2019, p. 118). Landscape parks next to national parks constitute one of the basic elements of the protected areas system. Polish landscape parks cover 8.4% of Poland's area (GUS, 2019, p. 119) and create a system that covers the territory of Poland fairly evenly, covering all geographical regions.

A landscape park is a large-scale form of nature protection created due to natural, historical, cultural and landscape values in order to preserve them in conditions of sustainable development. It has a lower status than a national park and is included in the V-category of the International Union for Nature Conservation. This category is defined as an area where cooperation between man and nature has created a territory with specific natural and cultural features, often very biologically diverse (Eagles et al., 2002, p. 10).

Tourist and educational functions are some of the most important functions that, apart from protection, the national parks perform. Depending on the advantages of individual parks, it is possible to create different forms of the tourism. However, all forms of cognitive tourism (mainly natural and cultural), active tourism (hiking, cycling, skiing, kayaking, sailing, etc.) and the dynamically developing in recent years agritourism, are the most desirable in these areas.

Landscape parks are currently the best model of nature protection in the 21st century, showing how to maintain natural and cultural diversity, whilst maintaining the possibility of using it in accordance with the principles of sustainable development (Beresford and Phillips, 2000).

The purpose of the article is to fill the existing gap in the evaluation of the scope of the official websites of Polish landscape parks and to determine the level of their development, ranging from simple accessibility on the Internet to the stage referred to as 'transformation', which manifests itself, among others, in the possibility of taking a virtual walk or live view.

2. Literature review

The interest in protected areas tourism is related to, among others, the benefits for the better well-being of their visitors (Puhakka, Pitkanen, and Siikamaki, 2017). The tourist attractiveness of protected areas, which is reflected in the number of visitors, is strongly influenced by environmental and social factors, including: the quality and variety of the offered range, the quality of recreational facilities and standard of accommodation, as well as accessibility and distance (IUCN, 2018). The most popular sources of information about the environment are television and the Internet, as the research by Głąbiński (2015) shows.

The subject literature includes attempts to assess Internet services, including protected areas. In particular, many attempts to evaluate websites have focused on travel-related websites (Cai, Card, and Cole, 2004; Hu 2009; Ostovare and Shahraki, 2019), government websites (Lee-Geiller and Lee, 2019; Verkijika and De Wet, 2018), educational (Acosta-Vargas, González, and Luján-Mora, 2020; Büyüközkan, Ruan, and Feyzioğlu, 2007; Liu, Liu, and Hwang, 2011), and museum websites (Kabassi, 2017). Tsai, Chou and Lai addressed the subject of the evaluation of websites of protected areas (2010). A conclusion is emerging from the literature review that there is no single universally accepted method or technique for evaluating websites. The extensive model of website evaluation, mainly based on extensive expert opinions and survey data, was used to evaluate the websites of Taiwanese national parks (Tsai, Chou, and Lai, 2010). However, due to the dynamic character of the websites, research conducted at different times may yield different results. The subjectivity of expert opinions is another limitation. A different approach is to evaluate the websites to assess the functional stages of e-government development (Layne and Lee 2001; Rao, Metts, and Mora-Mong, 2003). This approach was applied in assessing Greek national parks (Koliouska, Andreopoulou, Kiomourtzi, and Manos, 2015).

3. Methodology

Polish landscape parks, similarly to national parks, have their own administrative authority in the form of the Park Service and its Director. During the conducted study, it was found that the majority, 112 (89.6%) of the 125 Polish landscape parks were managed by a regional Landscape Park association, which is part of the administrative authority of the province (e.g. the Western Pomerania Regional

Landscape Parks association). In total, there were 17 regional landscape parks associations in Poland, including 12 covering only one province. The remaining 13 (10.4%) landscape parks operated independently, including running their own websites. The study covered all the official websites of Polish landscape parks, i.e. 30, and was conducted in May 2020.

The author tried to use the existing achievements, adapting the proposed approach in the four-stage model of e-administration development to the current conditions, including updating the database of the attributes of the websites of Polish landscape parks.

In the research preceding the actual study of the 30 official websites of Polish landscape parks, there was a qualitative analysis of the websites of Polish protected areas, in particular national parks and landscape parks. The purpose of the initial study was to determine the attributes (e-services) available on the websites of these areas. Figure 1 shows the assignment of individual e-services to one of the four stages (categories) of implementing the e-services of a website, namely presence, interaction, transaction and transformation. The subsequent stages of implementing e-services, thus separate, entail greater costs for website maintenance, higher technological requirements and greater complexity (Rao, Metts, and Mora-Monge, 2003, p. 14).

The first stage of development (Presence) results from the need to appear on the Internet and to present basic information about the institution online. In particular, at this stage of functional development the website includes contact information and frequently asked questions (FAQs), which are intended to relieve the workload of employees and present updated activities undertaken by the landscape park staff.

The next stage of development is "Interaction", which is characterized by elements on the website related to enabling advanced contact with the user through the information provided. The interaction consists in sharing links, the ability to use and download materials, including audio-visual materials, maps, documents, forms, opportunities to get acquainted with the current weather forecast in a given area, and selection of the communication language.

The presence on the website of elements related to the possibility of conducting transactions, for example making purchases, or reserving places in a secure environment, which is the htpps protocol, is typical for the "Transactions" stage.

The most advanced stage in the development of a functional website is "Transformation", in which the elements of virtual stay in a given area through cameras with live broadcasts, the possibility of taking a virtual walk, as well as the quality and speed of response manifested by attributes such as digital availability, responsiveness, and page loading speed.

The informational aspect of the website is understood as the presence and quality of the information provided, whereas the assessment of the technical functioning of websites consists in the evaluation of websites in terms of loading speed on mobile (X34) and stationary (X35) devices, meeting the requirements of availability (X36) and responsiveness (X37).

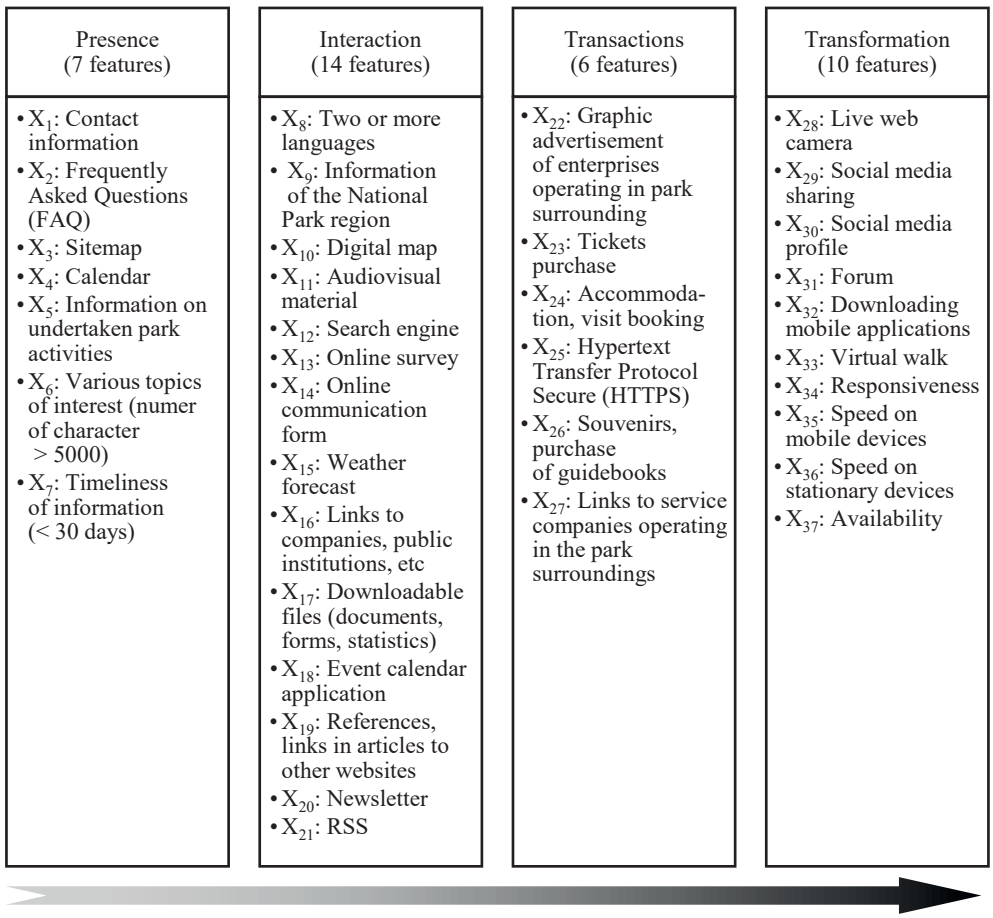

Fig. 1. E-services of landscape park websites divided into functional areas

Source: own work based on (Koliouska, Andreopoulou, Kiomourtzi, and Manos, 2015; Rao, Metts, and Mora-Monge 2003).

The availability of the websites of the landscape parks was tested with the free validator of the European Internet Inclusion Initiative (EIII) developed with the support of the European Commission, a tool used to check and compare websites (*Accessibility Check – Tingtun*, 2020). Websites for which most tests were unsuccessful (range from 0 to 70%) or many tests failed (range from 70% to 85%) were classified as not meeting the requirement of availability.

Responsive Web Design means that the website is suitable for all devices on which it can be viewed. The study used Test Mobile Friendly (Google, 2020).

The speed of websites divided into the speed of loading websites on mobile and stationary devices was tested based on the Google PageSpeed Insights tool (PSI,

2020). PSI was used, among others, in optimizing biodiversity resource portals (Budiman, Puspitasari, Wati, Widians, and Haviluddin, 2019). The tool calculates indicators of website performance and evaluates in the range of 0 to 100, where 90 or more is considered a good result (Google, 2018), and in the study such results were considered as fulfilling this task by the website.

In the next step an analysis of the presence or absence of e-services on the parks' websites was carried out. In the case of the existence of this feature its value was 1, and 0 in its absence. In this way, a new variable is assigned to each website that represents the sum of the existing e-services for specific functional areas. The level of implementation of the functional development stages described above was examined for each website. The level of implementation is understood as the share of the number of available e-services in the total number of e-services in individual functional areas.

4. Results

The results of the study are presented in Table 1. The overall development of the websites of Polish landscape parks is far from perfect, which results from the fact that the average of all assessed stages was only 37%. Only one website obtained an average result from all stages of development not exceeding 50%, and the only evaluated element that appeared on all websites of the studied parks was "contact details".

As expected, the websites of landscape parks showed the highest level of compliance with the assessment criteria for the first two stages of development, which are "Presence" and "Interaction", for which the median was 42.9%, compared to around 17% for "Transactions" and 30 % for "Integrations", which proves the hypothesis that Polish landscape parks do not use the full potential of modern information and communication technologies in their websites. The highest average of all stages of website development was only 51%, and for 40% of websites surveyed the average rating from all stages of development did not exceed 33%.

As part of the first stage of website development (Presence), apart from contact details, the highest level of implementation was recorded for the feature about the existence of information of activities inside the park (90%), although only for one website this was current news and with a text volume above 5000 characters. In most cases, very short (usually several-sentence) messages were presented. The existence of frequently asked questions – FAQ (7%) and a site map (20%) should be considered as a rational implementation of this stage of development.

At the second stage of development (Interaction), the highest level of implementation was noted for features such as the existence of links to other public institutions and local governments (97%) and the ability to download files like guides, forms or maps (87%). An equally high number, up to 87% of the surveyed websites, had the option to choose at least the second language version of the web

Table 1. Development of Polish landscape parks' websites

Webpage	Presence	Interaction	Transactions	Integration	Total
ZPK[2] w Przemyślu	42.9%	21.4%	0%	10.0%	18.9%
ZPK[2] Województwa Zachodniopomorskiego	14.3%	21.4%	16.7%	40.0%	24.3%
ZPK[2] Nad Dolną Wisłą	28.6%	42.9%	16.7%	30.0%	32.4%
Brodnicki PK[1]	28.6%	42.9%	16.7%	30.0%	32.4%
Gostynińsko-Włocławski PK[1]	28.6%	42.9%	16.7%	30.0%	32.4%
Górznieńsko-Lidzbarski PK[1]	28.6%	42.9%	16.7%	30.0%	32.4%
Krajeński PK[1]	28.6%	42.9%	16.7%	30.0%	32.4%
Nadgoplański PK[1]	28.6%	42.9%	16.7%	30.0%	32.4%
Tucholski PK[1]	28.6%	42.9%	16.7%	30.0%	32.4%
Widecki PK[1]	28.6%	42.9%	16.7%	30.0%	32.4%
Pomorski ZPK[2]	28.6%	28.6%	50.0%	30.0%	32.4%
ZPK[2] Województwa Śląskiego	57.1%	28.6%	16.7%	30.0%	32.4%
Zespół Opolskich Parków Krajobrazowych	57.1%	42.9%	16.7%	20.0%	35.1%
PK[1] Puszczy Knyszyńskiej	42.9%	35.7%	33.3%	30.0%	35.1%
Łomżyński PK Doliny Narwi	42.9%	35.7%	33.3%	30.0%	35.1%
ZPK[2] Województwa Lubuskiego	57.1%	42.9%	16.7%	30.0%	37.8%
Dolnośląski ZPK[2]	71.4%	42.9%	0.0%	40.0%	40.5%
ZPK[2] Województwa Małopolskiego	42.9%	50.0%	33.3%	30.0%	40.5%
ZPK[2] Województwa Wielkopolskiego	28.6%	64.3%	16.7%	30.0%	40.5%
ZPK[2] Pojezierza Iławskiego i Wzgórz Dylewskich w Jerzwałdzie	42.9%	50.0%	16.7%	50.0%	43.2%
Welski PK[1]	42.9%	50.0%	16.7%	50.0%	43.2%
PK[1] Wysoczyzny Elbląskiej	42.9%	50.0%	16.7%	50.0%	43.2%
PK[1] Puszczy Rominckiej	42.9%	50.0%	16.7%	50.0%	43.2%
Mazurski PK[1]	42.9%	50.0%	16.7%	50.0%	43.2%
Suwalski PK[1]	57.1%	57.1%	16.7%	40.0%	45.9%
Zespół Świętokrzyskich i Nadnidziańskich PK[1]	28.6%	57.1%	50.0%	40.0%	45.9%
ZPK[2] Województwa Łódzkiego	85.7%	50.0%	33.3%	30.0%	48.6%
Zespół Lubelskich Parków Krajobrazowych	42.9%	50.0%	33.3%	60.0%	48.6%
Mazowiecki ZPK[2]	57.1%	35.7%	50.0%	60.0%	48.6%
Zespół Karpackich PK[1] w Krośnie	71.4%	57.1%	33.3%	40.0%	51.4%
Average	42.4%	43.8%	22.2%	36.0%	37.9%
Medians	42.9%	42.9%	16.7%	30.0%	36.5%
Minimum	14.3%	21.4%	0.0%	10.0%	18.9%
Maximum	85.7%	64.3%	50.0%	60.0%	51.4%

[1] PK – Landscape Park; [2] ZPK – Regional Landscape Park

Source: own elaboration and calculations based on the conducted research.

page. It should be noted that not all content in Polish was available in the mentioned additional language versions. Some of the attributes specific to this stage of development were implemented marginally.

In particular, this concerned the possibility of contacting the park via the online form (7%), the possibility of the Internet user to comment through the survey (10%) and the possibility of receiving the newsletter (13%).

Landscape parks are generally characterized by a lower protection regime than national parks. The uniqueness of the parks is due to the fact that nature protection is carried out simultaneously with the economic use of this area. including tourist access to the area. In this context, it is surprising that the websites of landscape parks were characterized by the lowest level of implementation of the "Transaction" stage among the remaining stages of development, on average only in 22%. On every fifth website it was possible to buy tickets to the park attractions, and in only 7% of cases it was possible to book a visit or a stay. In only 13% of the landscape parks website there opportunities for buying gifts, books, maps. In this context, the fact that 53% of the surveyed websites had the HTTPS protocol protecting the integrity and confidentiality of data sent between the computer and the website, should be considered a success.

At the "Transformation" stage, the highest level of implementation was recorded in the profile called attribute in social media (60% of the cases). Only every eighth website of the parks offered the possibility of using observation via a webcam, and a virtual walk around the park area or park facilities was provided in 20% of the sites. Evidence of the lack of internet communication of landscape park administration with their surroundings is the fact that none of the websites directly provided access to articles on social media, and the public forum existed only for one Regional Landscape Park. To a small extent, only 37%, the attribute consisting in placing links to companies offering their services for visitors (such as hotels, gastronomy, equipment rentals) on the park's pages was implemented. In such use of the park pages it was possible to download mobile applications that facilitated exploration of the park area. The "Transformation" stage also includes the technical aspect of the functioning of the webpages. As part of the attribute which was the speed of loading pages of park services, the speed of loading pages on stationary devices looks much better, because 60% of websites (compared to 43% for mobile devices) achieved a good result. Digital availability, as well as responsiveness for all surveyed sites, was 60%.

5. Conclusion

Landscape parks allow visitors to familiarize themselves with Poland's unique natural, historical and cultural resources. Due to the popularity of the Internet, landscape parks are able to provide current information on the principles of nature protection, environmental education and tourist information through their websites. Information about the possibilities of visiting a landscape park, including a virtual

one (via computer), but also information about routes, accommodation, facilities – can increase awareness, interest and the likelihood of visiting a specific travel destination. In general, landscape parks did not use the full opportunities created by modern information and communication technologies on their websites. The assessment of all the websites of Polish landscape parks in the aspect of information (understood as the presence and quality of information), as well as the technical aspect (understood as the speed of loading pages, accessibility and responsiveness) proved that only in one case from the 30 examined sites did the average of all rated attributes on the web exceed 50%.

The problems related to the restrictions on the operation of landscape parks in Poland are clearly perceived. In order to exchange experiences and jointly implement tasks, landscape parks established the Landscape Park Agreement (PPKP, 2020). It seems that the opportunity to improve the operation of landscape parks in Poland including the use of Internet opportunities, may be the activities undertaken by this Agreement. The practical consequence of these activities could be the creation of recommendations for websites of protected areas on the basis of existing good practices. The websites should take into account global trends in the development of the Internet, including the increase in the number of mobile users and the dynamic development of social media. An area of further research should centre on survey of satisfaction of landscape park website users.

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OCENA SERWISÓW INTERNETOWYCH POLSKICH PARKÓW KRAJOBRAZOWYCH

Streszczenie: Celem artykułu jest ocena serwisów internetowych polskich parków krajobrazowych pod względem informacyjnym (obecność i jakość) oraz aspektów technicznych (szybkość ładowania, dostępność, responsywność) z uwzględnieniem etapów rozwoju funkcjonalnego. Badanie dotyczyło wszystkich (125) polskich parków krajobrazowych. Polegało ono na ocenie serwisów internetowych parków krajobrazowych według przyjętych 37 skonsolidowanych kryteriów, na podstawie których wyodrębniono 4 etapy rozwoju funkcjonalnego serwisów internetowych. W wyniku przeprowadzonych badań pozytywnie zweryfikowano hipotezę, że polskie parki krajobrazowe nie wykorzystują w swoich serwisach pełnego potencjału nowoczesnych technologii informacyjno-komunikacyjnych.

Słowa kluczowe: park krajobrazowy, ochrona przyrody, turystyka, strony internetowe, kryteria oceny stron internetowych, zrównoważony rozwój.