BUP Symposium 2020:
Research and Innovation for a Sustainable Baltic Sea Region

Experiencing islands: sustainable tourism on Gotland, Bornholm and Wolin. Analysis of TripAdvisor reviews

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Introduction

Islands as tourism destinations are considered in different perspectives (Oliviera et al. 2019), including those related to sustainability (Cheng and Wu 2015). However, there is a lack of research that includes experiences reported online (Oliviera et al. 2019). Moreover, the Baltic islands (research subject) have not been covered by any analysis of tourists' experience on online user-generated content so far.
In island-based tourism, the natural environment has been established as a major attraction for recreational activities (Lee et al., 2015). It is both the source and the context of island tourists' experiences.
The experiences gained by visitors to natural areas has been the subject of research in the field of outdoor recreation for many years . The so-called "experiential approach", which is one of the line of leisure motivational research (Driver & Toucher, 1970) suggests that recreation is not only an activity (like hiking or fishing) but is also a psychophysiological self-rewarding experience (Manfredo et al., 1996). The desire for experiences is an important motivation also for tourist trips.
Among many articles on sustainable tourism, it is difficult to find those related to experiences. Among few, Hunter (1997) mentions the environment and/or cultural experiences, Liu (2003) writes about authentic experiences, Sharpley (2007) identifies rural rather than sustainable experiences, and Walker & Moscardo (2014) mention ecotourism experiences. Saura et al. (2018) identify the environmental experiences (calling them factors) present in hotel reviews in TripAdvisor. They write about nature, rivers, views, local traditions, sustainable energy, noise pollution, etc. However, it should be emphasized that research on experiences reported online usually concentrates to client satisfaction. Rarely refer to sustainability. They are then most often focused only on ecotourism (Lu & Stepchenkova, 2012; Stoleriu et al., 2019; Ruhanen, 2019).

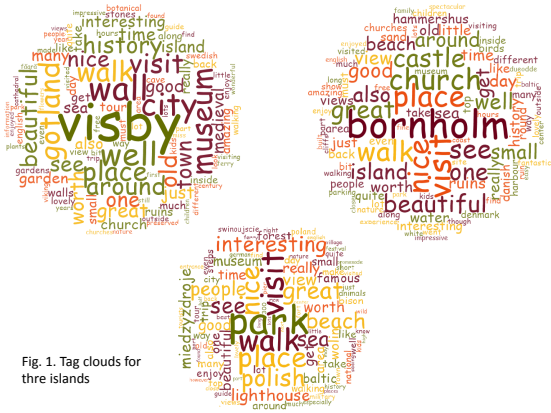

Fig. 1. Tag clouds for thre islands

Keywords

Baltic islands, experiences, sustainable tourism, TripAdvisor, Text Mining

Main results

As can be seen in Fig. 1, Gotland's experience is associated with e.g.: city old town walk and Gotland museum history. Bornholm's experience is associated with e.g.: beach & sand, round church. And Wolin's experience with e.g.: visiting forest park & bisons or military history german bunker.
Then a correspondence analysis was made to visualize association of cases (sustainability subdomains) and vars (islands) (fig. 2). Here it is clearly seen that Wolin's experiences are characterized by subdomains: forest and wildlife, Bornholm by environment, atmosphere, authetity and conservation. Gotland's experiences by plant, flowers, economy, climate and society.
Differences in the frequency of subdomains between the islands were verified using chi-square test. Only four subdomains significantly differentiate the studied islands: plant and flowers in Gotland reviews, wildlife and forest in Wolin reviews.

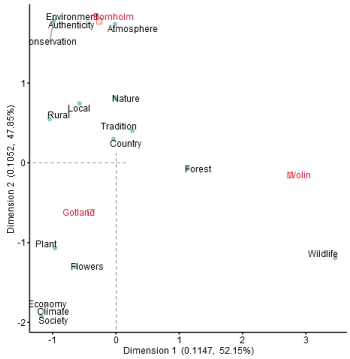

Figure 2. Correspondence analysis

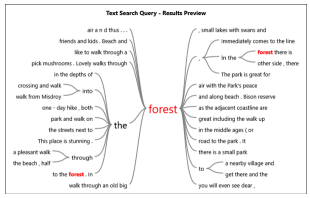

Figure 3. Word tree for „forest" in Wolin

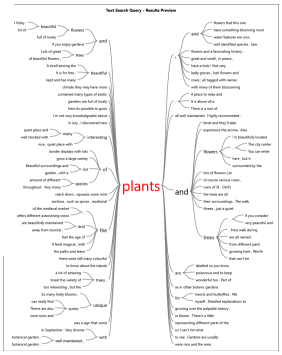

Figure 4. Word tree for „plants" in Gotland

Research questions

The aim of this article is to analyse the experiences gained (and shared via TripAdvisor) by tourists visiting Baltic islands. Authors focused on the following questions:
(1) What experiences are gained by tourists visiting the Baltic islands?
(2) Is the idea of sustainability present in their opinions?

Main method

This article uses mixed methods: quantitative (Text Mining, correspondence analysis) and qualitative (narratives research). Data for analysis — reviews posted by TripAdvisor users — were downloaded from TripAdvisor.co.uk using Web Scrapper application. All opinions from 'Things to do' category were collected regarding attractions located on three Baltic island: Gotland (950), Bornholm (373) and Wolin (157). In total 1,482 reviews were downloaded (5,548 sentences and 89,997 words). A number of software packages were used in the data analysis. The Statistica 13.0 package was used for a Text Mining analysis. Tag clouds and word tree were made with the QSR NVivo Pro 11.0 package. Coding of experiences and correspondence analysis were performed using the KH Coder package.
First, the most common words in opinions about the three islands were counted (fig. 1). Next, experiences / words related to sustainability were sought. It was searched for words related to three fundamental sustainability dimensions (environmental, social, and economic). Dozens of words related to these sustainability domains were identified. Then, these words were grouped into subdomains of synonyms and coded (tab. 1). For example, words: forest, trees, woods and tree were coded as a subdomain „*Forest".

Table 1. The results of authomatic coding

Code	Bornholm	Gotland	Wolin	Total	chi-square
*Environment	3 (0.80%)	3 (0.32%)	0 (0.00%)	6 (0.41%)	2.298
*Climate	0 (0.00%)	4 (0.42%)	0 (0.00%)	4 (0.27%)	2.238
*Plant	6 (1.61%)	47 (4.95%)	1 (0.64%)	54 (3.65%)	13.024**
*Atmosphere	9 (2.41%)	8 (0.84%)	2 (1.27%)	19 (1.28%)	5.215
*Nature	25 (6.70%)	39 (4.11%)	8 (5.10%)	72 (4.86%)	3.924
*Rural	1 (0.27%)	2 (0.21%)	0 (0.00%)	3 (0.20%)	0.401
*Conservation	1 (0.27%)	1 (0.11%)	0 (0.00%)	2 (0.14%)	0.764
*Forest	16 (4.29%)	44 (4.63%)	19 (12.10%)	79 (5.34%)	15.965**
*Wildlife	0 (0.00%)	7 (0.74%)	7 (4.46%)	14 (0.95%)	24.680**
*Flowers	4 (1.07%)	48 (5.05%)	3 (1.91%)	55 (3.72%)	13.459**
*Society	0 (0.00%)	1 (0.11%)	0 (0.00%)	1 (0.07%)	0.558
*Local	14 (3.75%)	24 (2.53%)	2 (1.27%)	40 (2.70%)	2.897
*Country	5 (1.34%)	11 (1.16%)	2 (1.27%)	18 (1.22%)	0.079
*Tradition	2 (0.54%)	4 (0.42%)	1 (0.64%)	7 (0.47%)	0.176
*Authenticity	5 (1.34%)	5 (0.53%)	0 (0.00%)	10 (0.68%)	3.840
*Economy	0 (0.00%)	1 (0.11%)	0 (0.00%)	1 (0.07%)	0.558
N of Documents	373	950	157	1480	

Main conclusion

The present study focussed on experiences in Baltic island tourism to identify their main dimensions based on visitors' narratives in TripAdvisor reviews. Despite the fact that all three destinations are islands in the Baltic Sea, tourists' experiences reported online differ significantly. This allows to build specific marketing strategies for the tourism product of the islands studied. It also allows creating the destinations image using the identified image attributes (experiences).
Although in experiences characteristic for each of the studied islands there are few experiences related to the idea of sustainability one can speak about the distinctness of each island in this respect. As a result, a study based on TripAdvisor reviews identified a number of experiences related to the idea of sustainability, in particular nature-related experiences. Gotland and Wolin stand out here: plants and flowers (for Gotland) as well as wildlife and forest (for Wolin) are specific experiences shared by tourists after visiting these islands. The identified sustainability experiences indicate that both of these islands can be an interesting destination for sustainable tourism. The results are of potential value to the tourism literature as they contribute to a better understanding of tourist experience in the context of island tourism and sustainable tourism in Baltic Sea region.

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