

Application of Modern Technology: Perspective of Country Tourism Office

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Abstract

Social media are considered as one of the most significant data source of modern times. Among numerous industries affected by social media impact, tourism emerges as one of the key sectors where social media are progressively relevant. It has the impact on both destinations and enterprises. Data analytic systems help us to make smarter, data-driven decisions. Now that smartphones are broadly used, analytics systems are developed as mobile applications. The main objective of this paper is to examine the increasing role of the social media data analytics in tourism by presenting the case study on country tourism offices of Slovenia and Croatia. Both descriptive statistics and content analysis were used in order to explore, interpret and compare insights from social media provided by data analytics mobile application. Assorted practical implications have revealed from the study report, such as suggestions for content and the time and day of publishing in order to get higher engagement. Furthermore, no one, to the best of our knowledge, conducted similar research, so the paper contributes to the theoretical development of the field as well.

Keywords: tourism, technology, innovation, research, development

JEL classification: O32

Introduction

Social media is one of the most popular buzzwords at the moment, and it represents a technological concept which prevalently changes overall business-to-business communication (Leung et al., 2013). As Kaplan et al. (2010) draw attention to, social media empowers individuals to become the media themselves in order to exchange knowledge, information, and experiences, which support development possibilities for various industries.

Regarding tourism and hospitality industry, there are generous benefits from social media usage. For instance, e- WOM has a direct impact on tourist destination reputation, and it will spread before, during and after travel (Litvin et al., 2008). Big data has a significant role as a marketing strategies driving factor and knowledge infrastructure (Fuchs et al., 2014), and data extracted from social media can be interpreted analysed from the statistical point of view, which allows planning, and developing strategies (He et al., 2013). Overall, the role of social media in tourism developed to entire travel cycle: it begins from vacation planning, destination and products promotion, and expanded to decision making during the trip and becoming data analytic machine afterward (Smallman et al., 2010).

Munar et al. (2013) affirms that in recent years, there has been an increasing amount of literature related to using social media in tourism, mainly based on how social media impact on traveller's decisions. Amaro et al. (2016) investigated segmentation between travellers based on the use of travel social media. Zeng et al. (2014) did a literature review about what do we know about social media in tourism and suggested a direction for new researches. Authors distinguished that the studies in social media in tourism field might find new interests in four main courses: community engagement, comprehensive marketing projects, differentiated destination management, and the legal and ethical issues arising from using social media in tourism.

However, the number of investigations that correlate tourism and hospitality with data analytics is scare.

Applications for content analysis are relatively recent and only a few numbers of researches brought together the tourism and hospitality industry and data analytics via applications. Kim et al. (2015) acknowledge the relevance, but it limits on online tools for tracking statistic. Authors investigated 104 research papers on the topic, but the scope limited to mobile marketing.

This paper fills the gap in the literature and contributes to the forming of a comprehensive picture of both the smartphone applications usage and data analysis techniques in tourism and hospitality.

Literature review

Social media in tourism

Social media is one of the most significant phenomena of the present times, and its reshaping communication as we know it. According to Statista (2018), there were about 2.46 billion social media users in 2017, which estimates at 71 percent of all internet users, and these figures are ever increasing.

One of the industries in which social media has significant influence is tourism and hospitality. Travel industry itself is experiencing growth every year and has become one of the most dynamic sectors for economic development and job creation (WTTC, 2017). WTTC (2017) highlights that tourism directly contributed 23 trillion US\$ in 2016, and indirectly 7.6 trillion \$ to the global economy, and supported 292 million jobs. The numbers equals to 10.2% of the world's GDP, and approximately 1/10 of all posts.

Buhalis et al. (2008) confirm social media support this growth and that it's playing a dominant role in travelling, from planning, using social media in a destination, to sharing travel experiences.

Usage of distinctive social media allows travellers to get access on the great amount of knowledge created by others, and this content is considered to be even more valid and reliable than reviews from professionals or marketer information (Fotis et al., 2012; Gretzel et al., 2008).

Therewithal, Tung et al. (2011) carry out that travellers not only exchange knowledge, they also share experiences through social media. These are not just facts about travel attributes such as information about the destination, attractions and weather conditions, but through posts on social media, they may additionally include imaginations, visions, and emotions about holiday features (Baym, 2015).

There is a big difference between how social media in tourism was used and how it has used today (Xiang et al., 2010). Munar et al. (2014) outlined that social media platforms enable travellers to initialize and share online knowledge, emotions and experiences and experiential moments much broader than before which

revolutionize primarily undisclosed and private experiences to general databases which can be interpreted and analysed by tourism institutions and organizations.

Social media role in the travel industry surfaced from marketing tool for destination and product promotion to a system that enables to create market positioning, creating personalised supply and hence, gain competitive advantage

Social media analytics applications

Statistic and analytic tools are recently progressively used within social media metrics in tourism for data analysis, engagement tracking, and predictions (Kambatla et al., 2014). Various mobile applications were developed for that purpose, which is very convenient for users due to a substantial cultural shift in technology usage: according to the forecast of Statista (2017) estimate that the number of people who use smartphones will surpass 2.8 billion globally by 2020, this number equals to more than one-third of the global population (Hacker Noon, 2017).

Mobile applications provide statistics for one or more social networks during a specified period (monthly, yearly). They can compare numbers between different profiles, and they even can give tips and advice for further activities. Insights can disclose trends on social media, preferences of visitors, and reveal favorite topics, which can help organisations and institutions to choose content for future posts (Amaro et al., 2016).

Statistical analyse for tracking social media insights via mobile applications is an excellent source of information for marketers and business owners, perfect for following current trends, and for monitoring the estate of their competitors in general (Sotrender, 2018). Some of the applications, as one used for this case study, present the personalised tips based on data statistics.

Case study: Application in tracking social media interaction for Croatia and Slovenia

Sotrender application

Application for tracking statistics on social media data used for analysis in this paper is So Trender. Application discovers insights provided by social networks, and it proposes actions to increase audience engagement. It does monthly reports on 11 industries and involves reach, engagement, customer service and content (Sotrender, 2018).

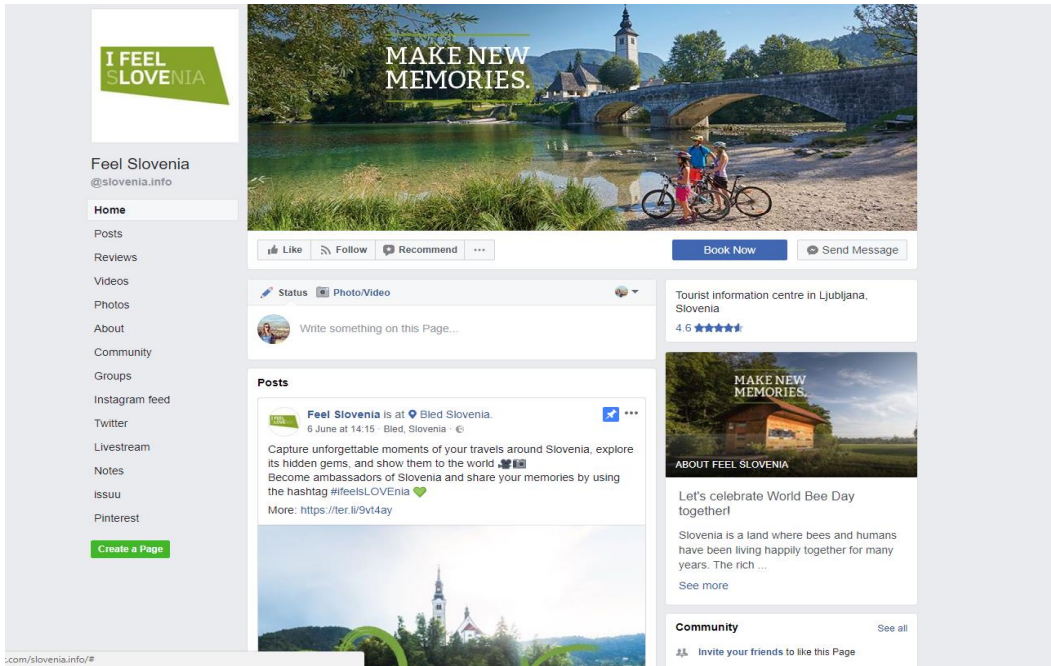
Sotrender (2018) have 429 agencies and brands as as clients, including global market leaders such as Nestle, Delloite, and Tesco. They utilise the application for market positioning, planning, and segmentation (Sotrender, 2018).

In this case study, SoTrender smartphone application will be used to compare Facebook insights for Slovenia national tourism offices.

Facebook pages of the countries tourism offices on the case study of Slovenia and Croatia

Facebook was chosen for social media example as the most used social network site worldwide with 2,234 million users according to Statista (2018) in April, 2018. which is 734 000 users more than secondly rated social media network, Youtube.

Figure 1
Facebook Profile of Slovenia National Tourist Office



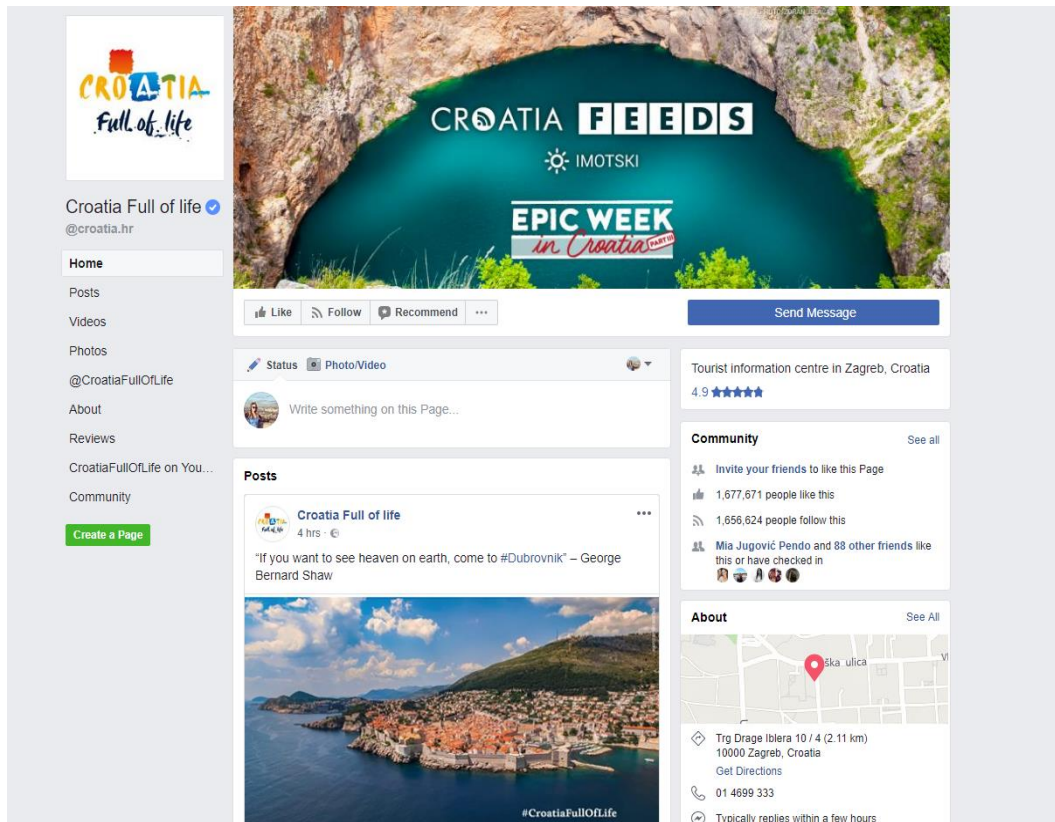
Source: Facebook (2018a)

Facebook page contains profile picture with the logo of the brand "I feel Slovenia": This brand is developed 2007 by Slovenia national tourism office for the purpose of improvement Slovenia's competitiveness in different fields.

Feel Slovenia means that the country cannot be presented with a simple image, tourists and travellers must feel and sense Slovenia altogether.

Cover photo summarizes everything that Slovenia wants to present to their tourists in one image: the synergy of nature, historical value, connectivity, and recreation. Moreover, profile embodies all essential information's about national tourist office as a daily updates, news, and photos.

Figure 2
Facebook Profile of Croatia National Tourist Office



Source: Facebook (2018b)

Croatia national tourist office Facebook page, as well as Slovenian, has logo brand picture on profile.

Marketing strategy for Croatians national tourist office is to present Croatia as a country full of life, as the slogan says it. It sends the powerful message that the "life shouldn't just be filled with days; days should be filled with life! And there is nowhere better to put this philosophy into practice than in Croatia!" (Croatian National tourist board, 2018). It emphasises the divergence of national beauties and various activities Croatia has to offer.

On cover photo, current events and happenings are highlighted, profile overall is interactive and filled with daily updates and news.

Slovenia

Slovenia is a boutique country situated in the heart of Europe and its first country in the world to be declared a green destination based on the Green Destinations Criteria and its capital Ljubljana was awarded the European Green Capital 2016 title (Slovenian tourist board, 2018).

Slovenia is over last few years experiencing continuous tourism growth. Slovenian tourist board (2018) present the numbers of international arrivals for 2017 which were 12% percent higher in 2016 than in 2015, and 8.1% more overnight stays, witch position Slovenia above the European average

The Slovenian Tourist Board (STB) represents a Slovenian national tourist board. It develops and realize the marketing of Slovenia's overall tourist offer in foreign

markets and ensures the sustainable development of Slovenian tourism (Slovenian tourist board, 2018).

Slovenian tourism focuses on few key objectives: increasing overnight stays thru the whole year, extending the average stay, developing strategies for micro and macro destinations, and targeting high-end visitors who are seeking diversification, quality, peace and personal benefits (Slovenian tourist board, 2018).

Croatia

Croatia, with over a six thousand coastline is country that occupies the largest area of the eastern coast of the Adriatic Sea (The Croatian national territory totals 56.594 km² with 31.479 km² of coastal waters for sailing, swimming, and diving (Croatian National Tourist Board, 2018).

Tourism is the major industry in Croatia which is experiencing expeditive growth. According to Eurostat (2017), Croatia had 17,4 million tourists with 86.2 million overnight stays which position Croatia into one of the most visited travel destinations in the Mediterranean.

Croatia has 8 designated national parks; areas witch landscape is afforded extra protection from development. There are 10 sites in Croatia inscribed on the UNESCO List of World Heritage Sites and 15 sites on the tentative list (Croatian National Tourist Board, 2018).

Croatia was recognised worldwide as interested spot. Few most prominent medias highlighted Croatia as the most valuable gem of Mediterranean. For example, the Lonely Planet (2005) accentuated Croatia as the top pick destination for 2005, while the National Geographic Adventure Magazine (2006) named Croatia as Destination of the Year in 2006 (Croatian National Tourist Board, 2018).

Facebook data metrics

Table 1 represents Sotrender data report analytics from a Facebook profile of Slovenian national tourist office for May 2018.

It contains 11 metrics. Collum "Likes made by page" is excluded from the original table, because it doesn't have any values in it. Furthermore, row "Summary" is added for a more clear understanding of the interpretations.

May 2018 resulted with a number of 544 087 fans on the Facebook page. This is the most straightforward indicator of visibility for a given profile. It also has an influence on organic reach of the communication, for the observed period, 10 184 people were talking about the page.

Metric also presents the "Interactivity index". Sotrender data analytics provide this index as a description of intensiveness of reactions to brand's communication, which represents the weighted index created by the application. Index sums up all the activities occurred within a Facebook page.

During the analyzed period the "Interactivity Index" value amounted to 76,097 and the "Interactivity Index of fans" amounted with 75,705 68,546 less.

The highest value of "Interactivity Index metrics" is achieved on the May 16-th with the value of 9,087. The lowest value of "Interactivity Index" was on the May 9-th with the value of 12.

There were totally five comments from the Page, and 31 posts during the analyzed period.

The number of 3141 shares were posted, with the highest value on the May,14-th (360 shares). The number of user likes is 21 597, with the peek on May 11-th with 3 109 likes.

There were 906 user comments overall in May and 19 user posts.

Table 1
Facebook Insights for Slovenian National Tourist Board

Facebook profile: FEEL SLOVENIA										
01-05-2018-30-05-2018										
Date	Number of fans	People talking about this	Interactivity Index (Inl)	Users Interactivity Index	Number of comments	Number of posts	Number of shares	Number of users likes	Number of users comments	Number of users posts
2018-05-01		0	1119	1107	0	1	36	431	25	0
2018-05-02		0	24	24	0	0	0	0	6	0
2018-05-03		0	1068	1056	0	1	39	388	11	0
2018-05-04		0	1387	1371	1	1	56	407	17	0
2018-05-05		0	1852	1840	0	1	60	796	18	1
2018-05-06		0	3955	3943	0	1	163	1163	43	0
2018-05-07		0	4454	4442	0	1	208	998	29	0
2018-05-08		0	476	460	1	1	13	184	14	1
2018-05-09		0	12	12	0	0	0	0	3	0
2018-05-10		0	3544	3520	0	2	130	1224	54	0
2018-05-11		0	6081	6057	0	2	173	3109	45	0
2018-05-12		0	3283	3271	0	1	156	571	48	1
2018-05-13		0	4786	4774	0	1	210	1278	31	1
2018-05-14		0	3550	3534	1	1	152	902	47	1
2018-05-15		0	7099	7087	0	1	360	963	88	1
2018-05-16		0	9087	9063	0	2	344	2935	153	1
2018-05-17		0	2283	2271	0	1	77	783	61	1
2018-05-18		0	1376	1364	0	1	55	308	41	1
2018-05-19		0	386	374	0	1	15	118	4	0
2018-05-20		0	3328	3316	0	1	155	776	12	1
2018-05-21		0	1499	1487	0	1	58	503	11	1
2018-05-22		0	3412	3400	0	1	152	840	29	1
2018-05-23		0	1606	1594	0	1	76	326	7	2
2018-05-24		0	2659	2627	2	2	124	579	13	1
2018-05-25		0	24	24	0	0	0	0	6	0
2018-05-26		0	1314	1302	0	1	51	442	11	0
2018-05-27	544082	0	32	32	0	0	0	0	2	2
2018-05-28	544082	0	3044	3020	0	2	142	612	28	2
2018-05-29	544082	0	2887	2863	0	2	115	831	48	0
2018-05-30	544087	10184	470	470	0	0	21	130	1	0
Summary:	544087	10184	76097	75705	5	31	3141	21597	906	19

Source: Authors' work of data from So trender metric

In table 2, data from the Facebook page of Croatia national tourist office were identified. Collum " Likes made by page" were excluded same way as in Table 1). Summarize row was added for more clear interpretation.

The number of Facebook page fans totally for May 2018 was 1 676469, with 450 917 people talking about it.

"Interactivity index" for activities occurred within a Facebook page was 80 036, and "Interactivity index of fans" was 79 568, which is 468 less.

Highest interactivity index was on the May 14-th with the value of 22 368, and the lowest on the May 30-th when it was zero.

There were 3 comments altogether made by page in May, and 38 posts, with a maximum of two per day.

Facebook users made 3280 shares, with peak on the May 17-th (379 shares). The number of 23 928 user also likes with the peak on the May 17-th with the count of 1976 likes. During the analyzed period of time, there were 694 user comments still with the highest value on the same date with 93 comments.

As for metric "User comments", there was a total of 32 comments with the maximum reached on the May 12-th with the 8 comments.

Table 2
Facebook Insights for Croatian National Tourist Board

Facebook profile: Croatia full of life										
01-05-2018-30-05-2018										
Date	Number of fans	People talking about this	Interactivity Index (InI)	Users Interactivity Index	Number of comments	Number of posts	Number of shares	Number of users likes	Number of users comments	Number of users posts
2018-05-01	1654753	10221	479	479	0	0	21	95	9	1
2018-05-02	1655347	9448	3787	3755	2	2	144	1327	31	0
2018-05-03	1655976	10787	6063	6039	0	2	259	1679	54	0
2018-05-04	1656681	12018	6345	6321	0	2	247	2201	39	1
2018-05-05	1657920	15737	4407	4407	0	0	123	2295	30	2
2018-05-06	1659175	18471,5	2578	2578	0	0	83	1182	14	1
2018-05-07	1660255	20580	2602	2578	0	2	79	1206	21	2
2018-05-08	1660882	22235	1372	1312	0	5	49	484	5	2
2018-05-09	1661429	22301	951	927	0	2	40	243	5	2
2018-05-10	1662239	22368	3765	3737	1	2	150	1181	39	0
2018-05-11	1663036	17703	3644	3620	0	2	150	1092	29	1
2018-05-12	1663907	19643	1479	1479	0	0	64	339	5	8
2018-05-13	1664771	13730,5	402	402	0	0	17	122	2	0
2018-05-14	1665316	14903	3254	3230	0	2	130	886	66	0
2018-05-15	1666201	13005	4490	4466	0	2	227	702	30	1
2018-05-16	1667473	14983,5	4639	4615	0	2	234	731	26	3
2018-05-17	1668595	16241,5	8448	8436	0	1	379	1976	93	2
2018-05-18	1669667	17212	2503	2491	0	1	119	511	19	0
2018-05-19	1670831	17000,5	2937	2913	0	2	126	829	17	0
2018-05-20	1671991	17789	1151	1151	0	0	42	403	16	1
2018-05-21	1673121	18965	618	606	0	1	28	106	13	0
2018-05-22	1674044	18831	3475	3451	0	2	129	1179	46	2
2018-05-23	1674457	16347	1210	1198	0	1	51	338	11	0
2018-05-24	1674759	15253	4860	4848	0	1	201	1428	48	1
2018-05-25	1674995	13276	1289	1277	0	1	47	489	6	1
2018-05-26	1675361	11839	428	428	0	0	14	176	7	0
2018-05-27	1675703	10373	686	686	0	0	36	82	4	1
2018-05-28	1676160	10176	1298	1274	0	2	49	470	5	0
2018-05-29	1676469	9480	876	864	0	1	42	176	4	0
2018-05-30	1676469	0	0	0	0	0	0	0	0	0
Summary:	1676469	450917,5	80036	79568	3	38	3280	23928	694	32

Source: Authors' work of data from So trender metric

Descriptive statistics and content analysis

As for the results for the first column, "Number of fans," significant difference between values occurred. However, external influence factors such as overall arrivals in both countries, which were, according to UNWTO (2017), 13 809 000 arrivals for Croatia and 3 032 000 in Slovenia, must be taken into consideration. Another influencing factor which can be relevant for these results could be a number of the total population which is 4,164 562 for Croatia, and 2, 081 272 for Slovenia (Worldometers, 2018a, 2018b). Both figures demonstrate a great advantage for Croatia, so the metric "Number of fans" should not be compared without acknowledging it.

Furthermore, immense difference is recognised in a column "People talking about" as well, results for Croatia are about seven times higher. The reason for the difference this immense could be both the high attractiveness of the destination, or the interactive and exciting content on Page itself.

"Interactivity index" value outcome in the favour for Croatia too, for 3 939, and 3 863 for "User interactivity index." This index represents a relevant metric because it displays the sum-index for all Facebook activity, both from admins and from users.

In columns "Numbers of comments," "Posts," and shares there are no significant differences. But "Numbers of user likes" are higher for Croatia, as numbers of user comments come in the favour for Slovenia with highest daily peek at 159, opposed to 93 in Croatia.

Interestingly, the further analysis presented that all the metric is at it's peeking for both countries in the same dates. For Croatia, the May 17-th is a date on which were the highest index, shares, and comments by far opposed to other times of the analysed period, and for Slovenia, May 15-th and 16-th have all the metrics at its peak.

On the May 17-th, on Croatian page was posted a photo which has the most likes and resulted with highest metrics. Performing content analysis, we established that it's the only photo published from linked Instagram accounts, which implicate the reason for the highest values.

For Slovenia, 16.-th May is a date with all metrics at peak. On that day, the announcement event for Bee day was posted, which contains a video, which was also linked with other social media.

Content analysis revealed that for both Countries, photos with the most likes are ones that are containing water on them. Croatian images have Adriatic Sea on most liked posts, and Slovenian have Lake Bled.

Thursday is the day that gained the best engagement numbers for Croatia. All Thursdays during the May of 2018 have better and higher engagement than the other days. For Slovenia Wednesday is the most engaged day. Weekends are the lowest days for both Countries.

Conclusion

Results of our research demonstrate that applications for data analysis do not only summarize available metric, they additionally calculate the measurements and indexes of their calculations based on the synthesis of data which are valuable for making conclusions, decisions and predictions and it can be applied on various fields of investigations.

This article provides practical knowledge that can be useful for companies, institutions, and countries. They can implement functional findings from this article as advice in order to increase the influence of their social media pages and get more followers or improve their marketing strategies.

Furthermore, this article implicates that even better results are produced when more social media are connected and used at the same, we acknowledged that both countries achieved their peeks on the days when combined social media content was used.

We came to a conclusion that even though each country has its own strategy, people react to the same content. A knowledge that people respond most positively to photos in which sea is included is also valuable for further developing of marketing schemes.

Beside practical contribution, this article demonstrates academic significance. None similar research was found, and the fields involved as the technologies included are prominent, relevant, emerging, interesting for further investigations.

Finally, our paper shows how social media role in tourism risen from marketing tool to a system which provides analyses to predict, market position and branding, and forming strategies.

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