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# **Social Media and ICTs as Tools for Visitor Flow Management in Heritage Destinations**

Master's Thesis  
of  
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Enjoy reading!

*“It has long since come to my attention that people of accomplishment rarely sat back and let things happen to them. They went out and happened to things.”*

*– Leonardo da Vinci*

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Today, I am glad to say: I am ready to continue building my career path in tourism proudly and confidently.

Anđela Šormaz  
Lugano, Switzerland  
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## **Dedication**

*To current and future students, advocates, and experts  
in sustainable heritage tourism.*

*May we always remember that heritage is not only about the past. It  
stands for the present and the future as well as for people.*

*Educate. Inspire. Engage.*

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## List of Abbreviations

approx.	approximately
DMO	Destination Marketing/Management Organization
DMMO	Destination Management <i>and</i> Marketing Organization
DOI	Digital Object Identifier
ed.	edition
ed./eds.	editor/editors
e.g.	exempli gratia
etc.	et cetera
eWOM	electronic Word-of-Mouth
FTE	Feedback Tourism Economy
ICT	Information and Communication Technology
i.e.	id est
MM	multiple meaning
n.d.	no date
RhB	Rhaetian Railway in the Albula/Bernina Landscapes
SAJA	Swiss Alps Jungfrau-Aletsch
UGC	User-Generated Content
UNESCO	United Nations Educational, Scientific and Cultural Organization
UIS	United Nations Educational, Scientific and Cultural Organization Institute for Statistics
UNWTO	United Nations World Tourism Organization
UNITWIN	University Twinning and Networking Programme
WH	World Heritage
WHS	World Heritage Site
w/o	without

# Chapter 1: Introduction

Social, economic, and environmental factors influence tourism while, at the same time, tourism is an important contributor to the development of these factors on local, regional, and global level. Whether tourism has positive or negative implications on the destinations' development, depends directly on how well it is managed and how well local values are communicated. Organizations responsible for tourism in heritage areas often struggle with the integration of and balance between tourism management and marketing activities and interests.

In recognizing this complexity, the study aims to examine the relevance of social media for tourism management and marketing communication, to explain their interconnectedness, and to deliver solutions for tourism management in heritage areas and communication of heritage values using social media and Information and Communication Technologies. It presents the Heritage Stewardship Destinations framework as well as the concept of the Feedback Tourism Economy which aims at empowering future strategies and plans based on feedback and fostering interactions among all tourism actors within a heritage destination.

## 1.1. Research Objectives and Outline of the Study

One of the most detailed definitions of *tourism destination*, given by Framke (2001, 5), states that “tourism destination is a geographical area which contains landscape and cultural characteristics and which is in the position to offer a tourism product which means a broad wave of facilities in transport, accommodation, food, and at least one outstanding activity or experience.” According to Beritelli, Reinhold, Laesser and Bieger (2015, 24) a destination is a construct in which:

- several dynamic visitor flows activate the same number of dynamic supply networks based on different resources at different points in time,
- several changing roles and responsibilities of actors can be found, and
- several variable areas can be analyzed and managed.

Lack of balance and the interconnectedness between tourism management and marketing communication creates a phenomenon called *overtourism*. Overtourism refers to the surpass of the *carrying capacity* which is “the number of individuals a given area can support within natural resource limits and without degrading the natural, social, cultural and economic environment for present and future generations” (Ruoss and Alfarè 2013, 38). Overtourism occurs due to the challenges to manage visitor flows within natural and cultural, rural and urban destinations, due to the growing tourism demand, and disbalance between tourism management and marketing communication. It leads to an overexploitation of destinations’ resources. Russo (2000, 5) explains that “the quality of the visitors’ experience is deteriorated not only by congestion and stress, but also by a decline in the quality of the environmental context in which the act of consumption takes place” as well as “in the quality of the auxiliary tourist facilities.” Issues related to overtourism are relevant even in times of a global pandemic when spatial movement of people is limited – i.e. Covid-19 that spread across the world in 2019 and 2020.

*Undertourism* is the opposite. It reflects lack of tourism demand in those areas which have potential for the tourism development. Undertourism occurs as a result of diverse factors – e.g. inaccessibility, lack of tourism infrastructure, lack of marketing communication, poorly developed governance and management systems, etc.

As Van der Borg explains, “the optimal allocation of these very scarce and vulnerable tourist assets is very important” but “the market forces do not guarantee this optimal allocation and the non-optimal use of heritage is widespread; heritage is, therefore, often underused or overused.” He emphasizes that “both phenomena are forms of unsustainable tourism development and irreparably damage the heritage, and thus the tourist attractiveness of destinations” (Van der Borg 2019, 2).

In recent years, social media and Information and Communication Technologies (ICTs) play an important role in tourism. *Social media* are “Internet-based applications built on the ideological and technological foundations of Web 2.0 and allow the creation and exchange of User Generated Content” (Kaplan and Haenlein 2010, 61). Using social media, “groups of people can communicate with each other simultaneously” and information is organized “in a network-form with flexible, adaptable, and context-relevant structures” (Shaked 2011, 3). The power of social

media is seen in their omnipresence in the modern world. They have been used as a tool to spread awareness on diverse issues – e.g. measures introduced due to the global pandemic Covid-19 (#StayHome contains over 38.800.000 posts; #DreamNowTravelLater over 48.000 Instagram posts), racism (#BlackLivesMatter over 21.800.000 Instagram posts on June 12<sup>1</sup>), etc.

Social media and ICTs are deeply interconnected. *Information and Communication Technologies (ICTs)* refer to “diverse set of technological tools and resources used to transmit, store, create, share or exchange information” (UIS, n.d.). These include mobile phones, computers, tablets, etc. Nowadays, communication is increasingly mediated by ICTs (De Ascaniis and Cantoni 2017). The two game changers, social media and ICTs, are intertwined in a sense that without ICTs the use of social media, as we know it today, would be impossible and without social media, the use of ICTs would be significantly lower. Due to the increased use of ICTs, the importance of visual experiences and social interactions, social media gained in popularity in recent years. Often, overcrowding and other issues related to overtourism are explained as a result of the destination’s popularity in social media. *Visitor flows* are “the general or aggregate patterns of movements in a given area” (Baggio and Scaglione 2017, 145)

According to the World Heritage Convention, *cultural heritage* refers to monuments, groups of buildings, and sites (works of man or the combined works of nature and man, and areas including archeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view) (UNESCO 1972, 2). *Natural heritage*, on the other hand, are “natural features consisting of physical and biological formations or groups”, “geological and physiographical formations”, and “natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty” (UNESCO 1972, 2). Cultural and natural heritage is not reproducible and is mostly a public resource (Van der Borg 2019).

For the purpose of the study, two UNESCO World Heritage sites – the Swiss Alps Jungfrau-Aletsch and the Rhaetian Railway in the Albula/Bernina Landscapes – are selected and presented in the first chapter. Chapter two presents the research questions followed by the theoretical background about tourism management and

marketing, the importance of ICTs and social media in tourism, as well as the connection between communication in social media and visitor flows in heritage destinations. Chapter three explains the methodological approaches to the examination of User Generated Content (UGC) within three social media platforms – Instagram, TripAdvisor, and Airbnb – as well as a structure of the in-depth discussions with tourism responsible in selected case studies. The methodology is followed by chapter four which involves a detailed presentation of the results further elaborated in the discussion – i.e. chapter five. The conclusions and recommendations towards balanced and sustainable tourism have been elaborated in chapter six together with the criticism and the potential for future research.

Figure 1 provides an overview of the structure of the research project.

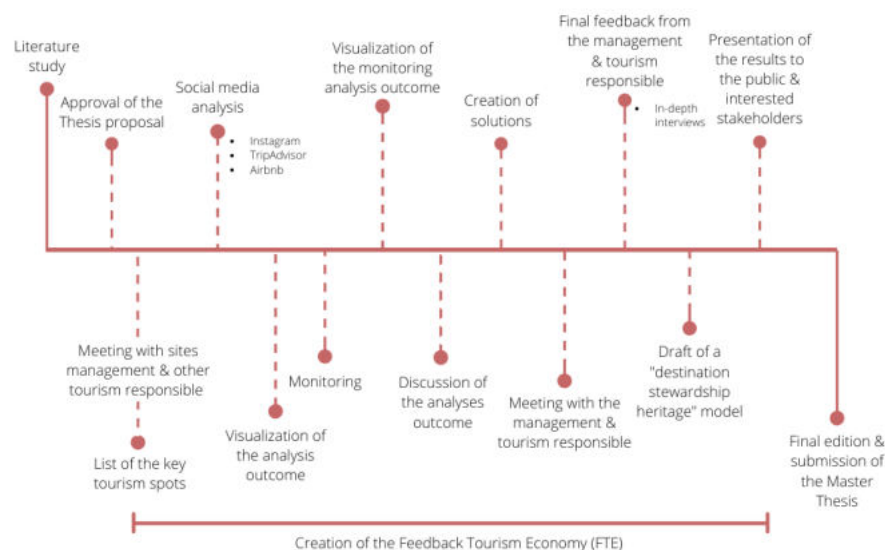


Figure 1. Overview of the structure of the research project.

Some of the topics investigated and discussed during an internship at the UNESCO Chair in ICT to develop and promote sustainable tourism in World Heritage Sites and during the Master thesis project have been published and, where not referenced accordingly, they are based on the respective papers, presentations and articles, as following:

### **Governance and Management in Protected Areas**

*Shifting Protected Area Strategies to Evidence Based Governance and Management (Ruoss and Alfarè 2017)*

*Linking Governance and Management of Conservation Sites to Local Evidences*  
(Ruoss and Alfarè 2020)

### **Social Media, Visitor Flows and Heritage Sites**

*Social Media to Balance Tourism Flow in Natural Heritage Destinations*  
(Sormaz and Ruoss 2020a)

*Social Media Action Planning with Innoreg* (Sormaz and Ruoss 2020b)

*Social Media for Sustainable Heritage Tourism Development*  
(Sormaz and Ruoss 2020c)

*Managing Tourism Flows on Mediterranean Islands with Social Media*  
(Ruoss and Sormaz 2020a)

*Social Media and ICT Tools to Manage Tourism in Heritage Destinations*  
(Ruoss and Sormaz 2020b)

## **1.2. Research questions**

The research questions presented in this section are focused on the examination of social media landscape and significance of social media for tourism. The questions aim to reveal the connection between the heritage destinations' presence in social media and important factors that impact visitor flows, as well as the relevance of the content generated in social media for the creation of solutions for visitor flow management in heritage destinations. The research questions aim to be exploratory, explanatory, and evaluative.

- How are user-generated contents in social media (Instagram, TripAdvisor, Airbnb) contributing to the creation of smart solutions to reduce pressure in overrun places and to stimulate tourism and its sustainable development in less visited areas within the Rhaetian Railway in the Albula/Bernina Landscapes and Swiss Alps Jungfrau-Aletsch UNESCO World Heritage sites?
- Which similarities between the two heritage sites can be observed based on such analysis?
- How can World Heritage sites include social media analysis in their tourism and visitor flow management strategies and plans?

- How do data change over a period of twelve months?
- What can tourism responsible within heritage sites learn from the monitoring analysis and how can they strategically apply what has been learned?
- How can social media and ICTs be used to manage tourist flows to balance over- and undertourism?
- What are the opportunities to promote the use of social media in heritage areas?
- What is the overall opinion of sites management and other tourism responsible regarding the analysis outcome, the monitoring analysis outcome, and provided solutions?

### 1.3. Description of Selected Case Studies

Case studies that have been selected for the thesis project are two UNESCO World Heritage sites:

- Swiss Alps Jungfrau-Aletsch (SAJA) – *natural* WH site situated in the Canton of Valais and Bern (Switzerland),
- Rhaetian Railway in the Albula/Bernina Landscapes (RhB) – transboundary *cultural* WH site situated partially in the Canton of Graubünden (Switzerland) and the Province of Sondrio (Italy).

Thanks to their cultural and natural importance and exceptional beauty, the two WH sites have been attracting visitors for decades. Some important figures such as the core and buffer zones, number of localities, inhabitants, visitors, and overnights are presented in Table 1 (FOEN 2005; Swiss Confederation 2006).

<i>Figures</i> \ <i>WH site</i>	SAJA	RhB
<i>Type of the WH site</i>	Natural	Cultural
<i>Core zone of the WH site</i>	824 km <sup>2</sup>	152,42 ha (approx. 1,5 km <sup>2</sup> )
<i>Surrounding area/buffer zones of the WH site</i>	805 km <sup>2</sup>	109.385,9 ha (approx. 1.094 km <sup>2</sup> )
<i>Number of municipalities</i>	23	19 Swiss + 1 Italian
<i>Number of inhabitants*</i>	35.000	67.515

<i>Number of visitors per year</i>	25 mil	11 mil
<i>Overnights per year</i>	5 mil	3 mil

*\*Relates to the surrounding area and the buffer zones (i.e. SAJA WH perimeter: around 10 inhabitants; RhB WH perimeter: uninhabited).*

*Table 1. Important figures related to the SAJA and the RhB.*

### 1.3.1. Swiss Alps Jungfrau-Aletsch (SAJA) UNESCO World Heritage Site

Situated in the south-western Switzerland, the Swiss Alps Jungfrau-Aletsch UNESCO World Heritage Site presents an outstanding example of a glacial area in the Alps. The WH region encompasses an area of 1.629 km<sup>2</sup> out of which 824 km<sup>2</sup> belong to the core zone – i.e. WH perimeter (Figure 2).



*Figure 2. The SAJA World Heritage perimeter and the surrounding area (WH region).*

*Source: SAJA Management Center.*

The site was inscribed on the UNESCO World Heritage List in 2001 under three out of the four criteria defined for natural WH sites, as follows (Küttel 1998; IUCN 2001; Jungfrau-Aletsch-Bietschhorn World Heritage Association 2005, 16):

- “The impressive landscape [of the site] has played an important role in European literature, art, mountaineering, and Alpine tourism. The area’s natural



beauty has attracted an international clientele and is known as one of the world's most spectacular mountain regions" - criterion vii;

- It is "an impressive example of mountain building and of the diversity of geological and geomorphological processes; [it] has the most glaciers in the Alps, and contains the largest glacier in western Eurasia – the Great Aletsch Glacier" - criterion viii;
- It is "characterised by a wide variety of alpine and sub-alpine habitats. It contains outstanding examples of ecological succession, including the characteristic upper and lower treelines of the Aletsch Forest. The global phenomenon of climate change can be observed particularly well in this region, in terms of varying rates of glacial retreat for different glaciers" - criterion ix.

Tourism in the area started to develop in the 18<sup>th</sup> century thanks to the scientists' curiosity. Aesthetic motives became important in the 19<sup>th</sup> century when tourism was mainly related to summer activities. Traveling to Switzerland and especially to the northern part of today's SAJA was seen as a privilege and was popular among British travelers. Around a century after, winter tourism experienced significant growth due to the opening of the railway lines that have provided better access to the mountains. Winter tourism became more popular than summer tourism. In 1912, the highest train station in Europe was opened – the Jungfraujoch (UNWTO 2018). Also, the Jungfraujoch is home to a unique research station – the Sphinx.

A number of hiking trails was created mainly in the southern area. Figure 3 presents one of the trails that have been preserved and are still hiked today.



*Figure 3. A trail along the water channel at the Lötschberg south ramp. Photo: Sormaz A.*

In 2005, design and promotion of tourism products and services were emphasized as urgent and very important fields of action for economy and culture (Jungfrau-Aletsch-Bietschhorn World Heritage Association 2005). Today, the site attracts visitors from all around the world – especially, the northern part with popular mountaineering areas such as Eiger North Face, Mönch and Jungfrau and localities such as Grindelwald, Wengen, Lauterbrunnen, Kandersteg, etc.

### **1.3.2. Rhaetian Railway in the Albula/Bernina Landscapes (RhB) UNESCO World Heritage Site**

Situated partially in the Canton of Graubünden (eastern Switzerland) and partially in the Province of Sondrio (northern Italy), the railway line is running from Thusis through the Albula and Bernina landscapes to Tirano. The Rhaetian Railway has been recognized as a valuable asset by local population hundreds of years ago. The operation started in the early 20<sup>th</sup> century – i.e. the Albula line in 1904 (Thusis – St. Moritz) and the Bernina line between 1908-1910 (St. Moritz – Tirano) with the total length of around 130 km (Swiss Confederation 2006, 17; Figure 4). Construction of the Albula and Bernina lines enabled the connection between people, nature, different cultures within the Canton of Graubünden, and at the same time, within two countries that share the heritage property – Switzerland and Italy. The Albula/Bernina region is

“the place of encounter, the contact region for divergent linguistic cultures and ways of life” (Swiss Confederation 2006, 27). It provided services such as transportation of people, animals, and goods.

Figure 4. The RhB WH property with the buffer zones. Source: RhB WH Management; Swiss Confederation 2006.

- The site “is a pioneering work of modern engineering and architectural structures that exhibits the important interchange of human values on innovative technical developments in the early 20th century” – criterion ii;
- It is “an outstanding example of a technological ensemble which illustrates the zenith of the golden age of mountain railways. It has also exerted a powerful influence on how the Alps have been perceived over the years” – criterion iv.

World Heritage Association which committed to preserve both the core and buffer zones of the site.

Tourism started to develop within the area of Engadin in the early 19<sup>th</sup> century – i.e. before the construction of the railway. It was “limited to the summer months until 1864, when an innovative hotel entrepreneur in St. Moritz invited some regular summer guests for a winter stay” (UNWTO 2018, 22). The construction of the railway, on one hand, provided a better access and interconnectedness of the Alpine localities within the canton and even greater development; on the other, certain valleys are still less popular and less visited since visitors stay on the train along the whole route or leave the train in more popular places. Today, the RhB WHS attracts railway, culture and nature enthusiasts with the Engadin area still being the most popular.

A sustainable territorial development project - the *Landwasserviadukt - Wahrzeichen Graubündens* (*Landwasser Viaduct - Landmark of Graubünden*, implementation planned for 2021/22) – aims at creating opportunities for local communities in the Albula Valley by grouping diverse, more and less known, tourism products and services in the *Landwasserwelt* (*Landwasser World*), connecting local and visiting communities and individuals, and strengthening relations among tourism actors.

Figure 5 presents the Landwasser Viaduct – the landmark of the RhB UNESCO WHS.



Figure 5. Train crossing the Landwasser Viaduct – the landmark of the RhB UNESCO World Heritage Site - entering the Albula Tunnel. Photography: Sormaz A.



## Chapter 2: Theoretical Background

### 2.1. Tourism Management and Marketing in Heritage Areas

While tourism can support heritage areas in the conservation of their values, it can also be one of the main contributors to the unbalanced and unsustainable development of heritage areas and one of the main deteriorators of their values. Certain heritage areas or spots within them face serious challenges related to overtourism “including overcrowding, massification, cultural appropriation, over-folklorization of cultural heritage and loss of authenticity” (European Union 2019, 7). Others are little popular among travelers despite their potential for the tourism enhancement. The impact of these challenges – over- and undertourism - can be short- and long-term. To prevent from overcrowding and other overtourism-related issues as well as to ensure conservation of the heritage values, tourism needs to be managed.

*Destination management* “consists of the coordinated management of all the elements that make up a tourism destination” (UNWTO, n.d.). In those destinations where destination management is implemented, it is normally done by destination management organizations (DMOs). It involves engagement of all actors within a destination towards a common goal: developing destination products and services in an efficient and sustainable way (Andrades, Dimanche, Vapnyarskaya, and Kharitonova 2015) so that they meet socio-economic requirements and ensure environmental preservation while satisfying needs and expectations of local and visiting communities and individuals. One of the main tourism-related management activities is visitor flow management.

*Destination marketing* is the implemented by destination marketing organizations (DMOs) and is oriented towards selling destination’s products and services (Andrades, Dimanche, Vapnyarskaya, and Kharitonova 2015, 82) according to the needs and preferences of desired tourism segments. According to business strategist, Karl Albrecht, it is “a proactive, strategic, visitor-centered approach to the economic and

cultural development of a location, which balances and integrates the interests of visitors, service providers and the community” (cited in Sharma 2013, 20).

Destination management *and* marketing organizations (DMMOs) are responsible for both tourism management and marketing that, according to Adeyinka-Ojo, Khoo-Lattimore and Nair (2014, 151), should be performed in collaboration with tourism destination stakeholders to achieve mutual benefits that include management of resources, marketing of tourism products, host community well-being, brand building, and tourist loyalty to the destinations. However, studies have shown that there are approximately 2 million destinations to visit across the world and almost all of them practice or engage in destination marketing (Balakrishnan 2008, 1; Morgan, Hastings, and Prichard 2012; Adeyinka-Ojo, Khoo-Lattimore and Nair 2014, 155).

In terms of tourism development in natural and cultural heritage areas, the European Commission (2003, 33-37) has identified ten key success factors:

- *significance* - the importance of cultural and natural heritage values of an area,
- *distinctiveness* - all that makes an area distinct from another, giving it a unique selling position,
- *clustering* – natural and cultural heritage can be scattered and be more attractive to potential visitors than one site on its own,
- *branding and networking* – creating an image around tourism products and services and building up a reputation,
- *access* – providing the access to the destination,
- *seasonality* – overcoming seasonality through events, discounts, offering more for the same price and encouraging off-peak tourism,
- *partnership* – partnerships on local, regional, and international level,
- *strategic planning* – developing a tourism strategy and involving all key players,
- *accessibility* – presenting the natural and cultural heritage in an understandable and enjoyable way so that visitors can learn about them,
- *sustainability* – conservation of natural and cultural heritage.

These success factors show that the foundation for tourism development are the three pillars of sustainability – social, environmental, and economic (European Commission 2003, 33). Only when there is a balance between the pillars, sustainability in tourism will be achieved. It is the reason why well planned and implemented management and

marketing activities, in addition to the previously mentioned success factors, are crucial for sustainable tourism development.

## **2.2. Importance of ICTs and Social Media for Tourism**

The continuous development of Information and Communication Technologies (ICTs) has had profound implications for the whole tourism industry (Buhalis and O'Connor 2015). Together with social media, they are embedded in every-day life of the world's population and have changed not only the way people interact but also the way they gather information, plan, make purchases, and share their impressions. Tourism destinations had to adapt to these changes and to increase their presence online. New opportunities have been created (e.g. easier and faster interactions among tourism actors – locals, visitors, businesses, organizations – marketing and promotion activities, etc.) as well as new challenges.

Marchiori (2012, 9) explains how the use of official (i.e. institutional) websites and the monitoring of the contributions produced by other users (User-Generated Content) are a challenge for the online presence of a tourism destination. Tourism-related UGC reflect the experience of tourists at specific destinations as well as reactions about the destinations themselves (De Ascaniis and Cantoni 2014). According to Buhalis “a tourism destination can be a concept which can be interpreted subjectively by consumers, depending on their travel itinerary, cultural background, purpose of visit, educational level and past experiences” (2000, 1). It means that a destination is what is thought to exist and not only what actually exists – i.e. it is a mental concept in the minds of (potential) visitors (Seaton and Bennett 1997; Zemla 2016, 3).

User-Generated Content (UGC), in the visual and textual form, is produced mainly in social media and thanks to ICTs. Composed of the content generated by users, electronic word-of-mouth (eWOM) contributes significantly to the creation of destinations' online reputation. Here lies the significance of the interpretation of heritage values by all actors – local and visiting communities, site managers and other tourism responsible – through official (i.e. institutional) and non-official websites and social media accounts. Due to the development and increasing use of ICTs as well as social media and other types of new media, the line between senders and receivers

of the message (i.e. content) is almost not existing. Senders (i.e. addressers) of the message are not only DMOs but all heritage destination actors while receivers (i.e. addressees) are different individuals of the same groups. Continuously published narratives about the heritage negotiated on the global symbolic market of online communication require a careful attention to their interpretation by the addressees (in eTourism, using the term “target” would be highly misleading since online communication channels are always bi-directional) (Cantoni 2018, 71). As Brezovec (2018, 61) explains, “reaction is the essence of communication; if a message in communication process does not stimulate any cognitive, emotional, or behavioral reaction of the visitor, it has probably failed its communication goal.”

The message shared through social media has “become a major factor in influencing various aspects of consumer behavior including awareness, information acquisition, opinions, attitudes, purchase behavior, and post-purchase communication and evaluation” (Mangold and Faulds 2009, 358). Word-of-Mouth in social media influences travelers in all the phases of their purchasing process (Schindler and Bickart 2005; Christou and Nella 2012) with a different extent and diverse objectives (Folis, Buhalis, and Rossides 2012). In other words, the message can influence potential travelers during their decision-making processes to visit or not to visit a given tourism destination (Marchiori 2012). In fact, the number of pages that travelers search before booking online is 184 (Catud 2019). Modern travelers have more trust in other travelers’ opinions shared in social media than in official marketing advice (Zivković, Gajić and Brdar 2014). The information gathered in social media helps them reduce the uncertainty and create expectations of what can be found in the destinations (Zeithaml, Bitner and Gremler 2006).

ICTs and social media enable communication among tourism destination actors and “communication is key to increased knowledge of and support for sustainability” (Leung, Spenceley, Hvenegaard, and Buckley 2018, 51). Communication enables the flow of feedback which is “an essential aspect of communication, providing evidence that the desired message was received and understood” (Leung, Spenceley, Hvenegaard, and Buckley 2018, 51) and it holds “power in understanding why users behave as they do” (Usabilla 2020).



## 2.3. Travel-Related Social Media Platforms

Popularity and the use of social media are increasing. In 2020, the number of social media users worldwide is 3.6 billion which is expected to reach 4.41 billion in 2025 (Statista 2020a). Some of the most popular platforms are Facebook, YouTube, and Instagram. In just 60 seconds, Facebook users upload 147.000 photos, YouTube users upload 500 hours of video, and Instagram users post 347.222 InstaStories (Domo 2020). In terms of tourism, Sormaz and Ruoss (2020b) emphasize the importance of *Instagram*, *TripAdvisor*, and *Airbnb*. These are interactive, experience-driven platforms where the majority of the content is travel-related.

### *Instagram*

Instagram was founded in 2010 and, on a monthly basis, it counts 1.82 billion users worldwide (Statista 2020b). Tools that enable interactions among users are likes, comments, shares, saves, tags, hashtags, geotags. Content is in the visual (e.g. photos and videos) and textual form (e.g. captions). More than 70% of the content is travel-related and around 67% of travel enthusiasts discover new destinations using Instagram (Facebook IQ 2017). Visual experience is the key characteristic of the platform which explains its popularity among travelers. Today, the term *instagrammable destination* is used to describe a destination which is “visually attractive or interesting such as that it lends itself to being photographed and posted on social media (specifically on Instagram)” (Wiktionary 2020).

### *TripAdvisor*

Founded in 2000, TripAdvisor is a commercial platform that offers travel information, products and services, and online reservations and bookings. It has 490 million monthly active users, seven million listings for accommodation facilities, restaurants, and attractions (Review42 2020) and 859 million reviews (Statista 2020c). Content is travel-related and generated by visitors and businesses (e.g. hotels, restaurants, etc.). It is in the visual (e.g. photos) and textual form (e.g. descriptions and captions). The interaction tools are reviews, responses, helpful votes, saves, and shares. TripAdvisor offers its users a possibility to interact through profiles and listings.

Two categories of the listings are distinguished:

- *businesses*: restaurants, hotels, vacation rentals, airlines, organized tours,
- *attractions*: sights and landmarks, nature and parks, museums.

The key characteristic of the platform is *reviews*. After TripAdvisor was introduced, content generated by visitors to tourism destinations was related to the reviews only. Later, a new feature - *post photos* – was introduced, the layout was redesigned, and the usability was improved – all to ensure a better visual user experience. However, the culture of reviewing still prevails. Features introduced in 2018 (e.g. create profiles, follow and interact with other users, create and share trips) are still less popular. Today, TripAdvisor is considered a go-to resource for travelers. In particular, 74% of travelers visit TripAdvisor prior to booking (Catud 2019).

### *Airbnb*

Airbnb, founded in 2008, is a commercial platform that offers tourist accommodation (primarily homestays) and online and offline tourism experiences. It counts over seven million listings and 750 million Airbnb guest arrivals (Airbnb Newsroom, n.d.). Content on Airbnb is strongly user-generated and derived from host-guest interactions. Interaction tools used by hosts are photos (visual content), lodging rentals descriptions and opinions related to guests (textual content). Guests share their opinions about hosts, lodging rentals, and the overall hospitality services provided (textual content only). For both, a prerequisite to reading opinions is to write their own (i.e. guests need to evaluate hosts in order to read the hosts' evaluation and vice versa).

## **2.4. Connection Between Communication in Social Media and Visitor Flows in Heritage Areas**

The impact of communication tools, especially visual and short textual information shared on social networks are increasingly determinant for the tourism development (Ruoss and Sormaz 2020b). Visual content has demonstrated to be particularly engaging and to mediate travel experience (Tussyadiah and Fesenmaier 2009). Visual communication, which takes place in social media, is highly influential. It evokes emotions, while emotions – coming from travelers' past experiences or those they expect to be part of – are important drivers of their future travel-related decision-

making processes (Ruoss and Sormaz 2020b). The so-called *visual influence*, the outcome of visual communication, can boost already well-known as well as less-known and less-developed destinations. In heritage destinations, unforeseen and exponential growth of visitor flows can result in negative impacts on natural and cultural assets in a short and long period (Ruoss and Sormaz 2020b).

## Chapter 3: Methodology

The focus of this study is the number of messages (i.e. content in the form of posts and reviews) created by all actors within heritage destinations and shared in social media without analyzing its textual or visual elements. The aim is to examine the presence of the two UNESCO WH sites on selected social media platforms. Based on the research questions and the philosophy of the study, a mixed method is chosen. It includes both quantitative and qualitative approaches for the collection of primary data. A literature study aims to explain why commercial platforms such as Trip Advisor or Airbnb can be considered social media platforms – like Instagram or Facebook. For the examination of tourism spots within the heritage sites - the Rhaetian Railway in the Albula/Bernina Landscapes and Swiss Alps Jungfrau-Aletsch – and their presence in social media, management centers are involved by providing lists of the key tourism spots. The lists were used for the collection and analysis of the content on Instagram, TripAdvisor, and Airbnb.

### 3.1. Analysis of User-Generated Content in Social Media

The research technique used to examine the presence of heritage destinations and their parts across the three social media platforms – Instagram, TripAdvisor, and Airbnb - is the *content analysis*. Four languages have been considered: English, German, Italian, and Romansch (spoken in the Canton of Graubünden).

Monitoring analysis, conducted after a certain time period (e.g. 12 months), is based on the same methodology and aims to:

- enrich the study by delivering new data which will be compared with already existing,
- provide insights into the changes on analyzed platforms over the specific time period,
- provide insights into already existing social media strategies and plans applied in different areas within WH sites,
- complement and strengthen the design of the future tourism management strategies and plans taken by site management centers and other tourism responsible in WH sites.

Table 2 presents information about the analyses period, the number of geographical areas and tourist spots, and the number of the hashtags that have been analyzed. The selected social media platforms are structurally different and therefore, different approaches to the content analysis are required.

<i>Information \ WH site</i>	<i>SAJA</i>	<i>RhB</i>
<i>Analysis period</i>	March 19 - April 4, 2019*	January 23-30, 2020
<i>Monitoring analysis period</i>	March 19-23, 2020	-
<i>Number of analyzed geographical areas (A)</i>	13	33
<i>Number of analyzed spots (B)</i>	135	60
<i>Total (A+B)</i>	148	93

\*The analysis of the SAJA's presence in social media in 2019 includes only Instagram and TripAdvisor. Airbnb analysis was conducted on June 30, 2020.

*Table 2. The analyses period and the number of analyzed geographical areas and tourist spots within selected heritage sites.*

### 3.1.1. Instagram Analysis

Instagram posts can be shared using the hashtags that provide insights into the number of posts related to geographical areas and tourist spots within them. A single post may contain more than one hashtag related to the same area or spot. To avoid the replication of values, only those with the highest number of posts have been examined – e.g. #LandwasserViadukt with over 5.000 posts instead of #LandwasserViaduct with over 1.000 posts.

Statistical method chosen for the analysis of the content within the hashtags is *sampling*. The predetermined research sample is 100 posts. The findings can be applied to the whole population – i.e. the total number of posts within the hashtag. Sampling aims to deliver data without the *multiple meaning*. Multiple-meaning posts are those that do not relate to the analyzed area or spot – e.g. #Reichenbachfall contains data referring to the analyzed spot – i.e. waterfall - and the movie with the same title. Therefore, the percentage of the posts related to the movie – i.e. multiple-

meaning posts – needs to be extracted. The result is the total number of area/spot-related posts.

### **3.1.2. TripAdvisor Analysis**

The TripAdvisor analysis aims to provide insights into the number of tourist facilities - attractions (sights and landmarks, nature and parks, museums) and businesses (restaurants, hotels, vacation rentals, tours) – offered by locals, site managers, and other tourism responsible within the destinations. Additionally, the study examines the number of reviews generated by visiting communities and related to these facilities. The total number of facilities and reviews are sorted according to the geographical areas they belong to.

### **3.1.3. Airbnb Analysis**

The analysis of Airbnb aims to provide insights into the relation between the frequency of rentals and reviews per lodging rental. It examines the number of reviews generated by visiting communities (i.e. guests) and the number of lodging rentals offered by local communities and businesses (i.e. hosts) within localities inside the heritage areas. The number of lodging rentals without reviews needs to be extracted from the total number of lodging rentals. The result is the total number of reviews related to each locality.

## **3.2. Visualization of the Analysis Outcome: ArcGIS**

Visualization is considered an easy-to-read way to interpret the results of an analysis – especially, in the spatial context. The ArcGIS software is used to deliver the results of the study. Previously collected and structured data is distributed on the maps creating spatial patterns. The patterns are examined and interpreted aiming to provide relevant recommendations and support the decision-making processes of site management centers and other tourism responsible. Data used for the visualization is the total number of:

- area/spot-related posts (Instagram),
- reviews (TripAdvisor and Airbnb).

### 3.3. In-depth Interviews and Feedback Discussions with Tourism Responsible in World Heritage sites

In-depth discussions with site management centers and other tourism responsible are organized after the completion of the analysis. The aim is to explore their perception regarding the analysis, the outcome, and the recommendations provided.

Table 3 shows the themes and questions prepared for the in-depth interviews and feedback discussions. Participants are informed in advance about the overall topic so that they can prepare respectively. The majority of the discussions are held face-to-face and are semi-structured – i.e. questions are prepared in advance and the researcher is free to ask probing questions to collect more detailed responses. Some of the discussions are held online. Projective techniques such as maps and schemes are incorporated (maps - see Chapter 4; schemes - see Appendix 3).

<i>Themes</i>	<i>Questions</i>
<i>Introduction</i>	Formal greeting, brief presentation of the interviewer and aims of the interview.
<i>Professional engagement</i>	Could you shortly introduce yourself – what is your job?
<i>Tourism products &amp; services</i>	Which are the main tourism products and services communicated by your organization?
<i>Marketing channels</i>	Which channels does your organization use to communicate these products and services?
<i>Social media communication</i>	What is/are the aim(s) of your organization's social media presence?
<i>Management activities</i>	Does your organization apply any managing activities related to tourism in the area? If not, are there any managing activities related to tourism in the area that are known to you?
<i>ICTs &amp; social media in tourism to heritage destinations</i>	In your opinion, how important are digital technologies and social media for travelers to heritage destinations? In your opinion, in which phase(s) of the traveler journey social media are important: pre-, during-, or post-trip phase?
<i>Perception towards the social media analysis outcome</i>	<i>(interviewer incorporates maps in the discussion)</i> Here are the results of the study. Please take your time to highlight those areas which presence or non-presence on social media you find rather surprising (if any). Could you briefly explain why?
<i>Perception towards the recommendations</i>	<i>(interviewer incorporates schemes and the list of recommendations)</i> Do you think these recommendations are suitable for the heritage area?

	What do you think, which of the mentioned recommendations your organization would be willing to implement?
<i>Perception towards the overall social media analysis</i>	What is your overall opinion regarding the social media and monitoring analysis that have been conducted – is this type of the analysis something your organization and the whole heritage area can benefit from? Would you be willing to use such study in the future?
<i>Conclusion</i>	Additional comments (if any)

*Table 3. Themes and questions for the in-depth interviews and feedback discussions.*



## Chapter 4: Results

### 4.1. Case Study I: Presence of the SAJA in Social Media

The social media analysis outcome of the SAJA is shown in Table 4 (Instagram<sup>1</sup> and TripAdvisor<sup>2</sup>) and Table 5 (Airbnb<sup>3</sup>). The Airbnb analysis includes localities that form the WH perimeter and those which parts are inside the WH region. The results are visualized in Figures 6, 7, and 8.

Geographical areas	Instagram	TripAdvisor
	Total N° of Posts	Total N° of Reviews (hotspots)
Jungfrau	317.133	4.463
Lauterbrunnen	272.623	2.854
Grindelwald	230.375	4.197
Schilthorn	123.164	4.149
Kandersteg	117.531	643
Eggishorn	37.182	467
Guttannen	28.047	570
Bettmeralp	27.724	1.572
Rosenlauri	23.381	1.273
Aletschbörd-Belalp	13.469	123
Goms	12.060	337
Fafleralp	3.190	0
Raron-Niedergesteln	2.737	14

Table 4. Presence of geographical areas within the SAJA on Instagram and TripAdvisor (analysis period: March 19 - April 4, 2019).

Localities	Airbnb			
	Total N° of lodging rentals	Lodging rentals w/o reviews	Total N° of reviews	N° of reviews per lodging
Kandersteg	51	10	1201	29
Reichenbach im Kandertal	20	3	682	40
Unterseen	17	2	1476	98
Interlaken	319	35	15971	56
Matten bei Interlaken	49	3	3807	83
Wilderswil	49	7	2423	58
Lauterbrunnen	392	52	15171	45
Gündlischwand	5	2	262	87
Grindelwald	275	34	8809	37
Meiringen	99	71	708	25
Schattenhalb	4	1	122	41
Innertkirchen	23	12	188	17
Guttannen	3	0	34	11
Bellwald	52	17	392	11

Canton of Bern

Canton of Valais	<i>Fieschertal</i>	13	3	104	10
	<i>Fiesch</i>	31	5	263	10
	<i>Betten</i>	1	0	2	2
	<i>Bettmeralp</i>	61	20	395	10
	<i>Mörel-Filet</i>	21	1	303	15
	<i>Riederalp</i>	115	54	794	13
	<i>Birgisch &amp; Mund</i>	5	1	71	18
	<i>Naters</i>	18	4	347	25
	<i>Eggerberg</i>	1	1	0	0
	<i>Baltschieder</i>	3	0	25	8
	<i>Auserberg</i>	2	1	3	3
	<i>Raron-Niedergesteln</i>	0	0	0	0
	<i>Steg-Hohtenn</i>	2	0	60	30
	<i>Ferden</i>	3	0	187	62
	<i>Kippel</i>	13	3	81	8
	<i>Wiler (Lötschen)</i>	24	5	113	6
	<i>Blatten</i>	11	4	108	15

Table 5. Presence of the SAJA's localities on Airbnb (analysis date: June 30, 2020).

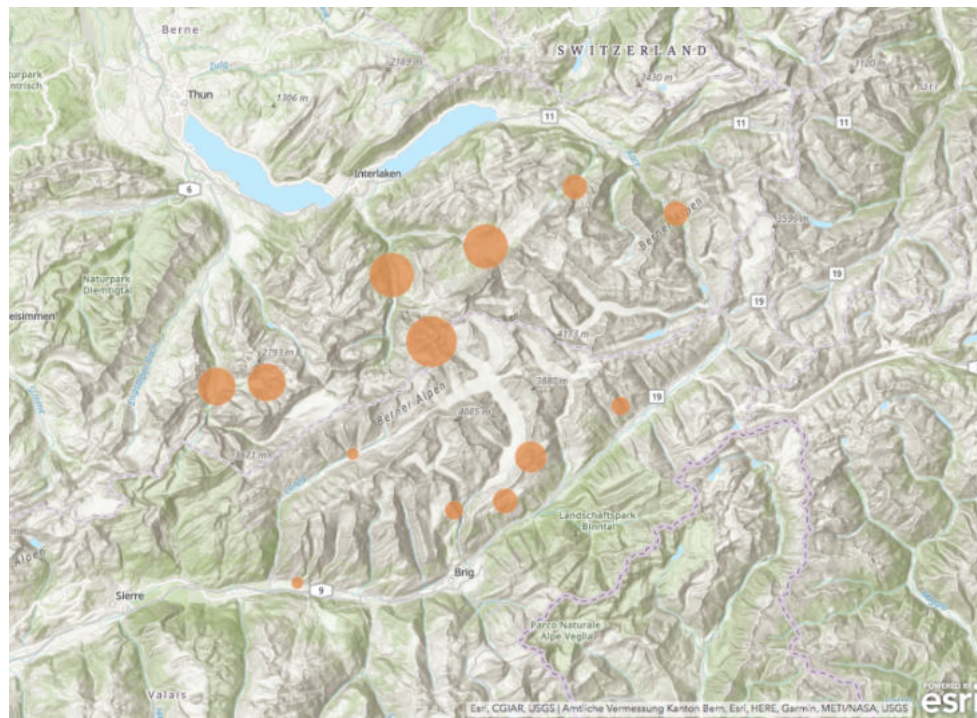


Figure 6. Visualization of the results – Presence of the SAJA on Instagram (analysis period: March 19 – April 4, 2019). Map image: Copyright © Esri and its licensors / Created by: Sormaz A.

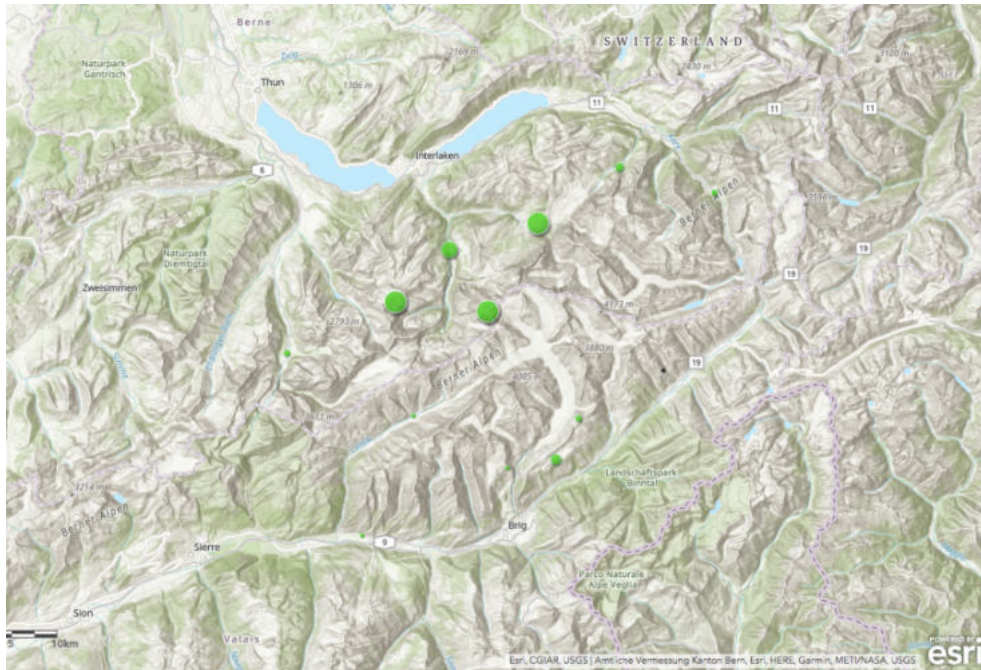


Figure 7. Visualization of the results – Presence of the SAJA on TripAdvisor (analysis period: March 19 – April 4, 2019). Map image: Copyright © Esri and its licensors / Created by: Sormaz A.

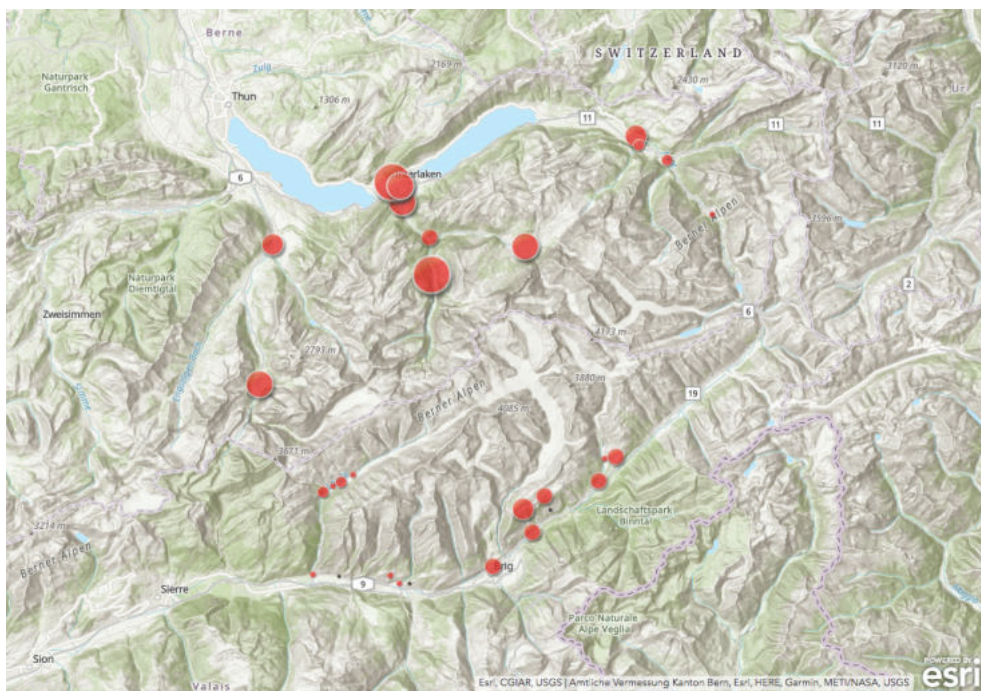


Figure 8. Visualization of the results - Presence of the SAJA on Airbnb (analysis date: June 30, 2020). Map image: Copyright © Esri and its licensors / Created by: Sormaz A.

Significant differences between social media presence of the northern and southern parts of the Swiss Alps Jungfrau-Aletsch (SAJA) can be observed. The area with the highest presence is Jungfrau in the northern part (317.133 Instagram posts, 4.463 TripAdvisor) while the least present is Raron-Niedergesteln (2.737 Instagram posts,



14 TripAdvisor reviews, and without Airbnb reviews) in the southern part of the SAJA WH region. The northern area and especially, the area of Jungfrau, is historically well-known for its tourism offerings. It is somewhat inhabited and is home to the High Alpine observatory – Jungfraujoch. Due to the easy access, international visitors are more present in the North compared to the other parts of the SAJA WH region. In the southern part, the presence of the spots overlooking the Aletsch Glacier and those around Bettmeralp overshadow other spots.

#### 4.1.1. Monitoring Analysis of the SAJA's Presence in Social Media

The monitoring analysis is conducted between March 19 – April 4, 2020 - 12 months after the first analysis. The results are presented in Figures 9 (Instagram<sup>1</sup>) and 10 (TripAdvisor<sup>2</sup>).

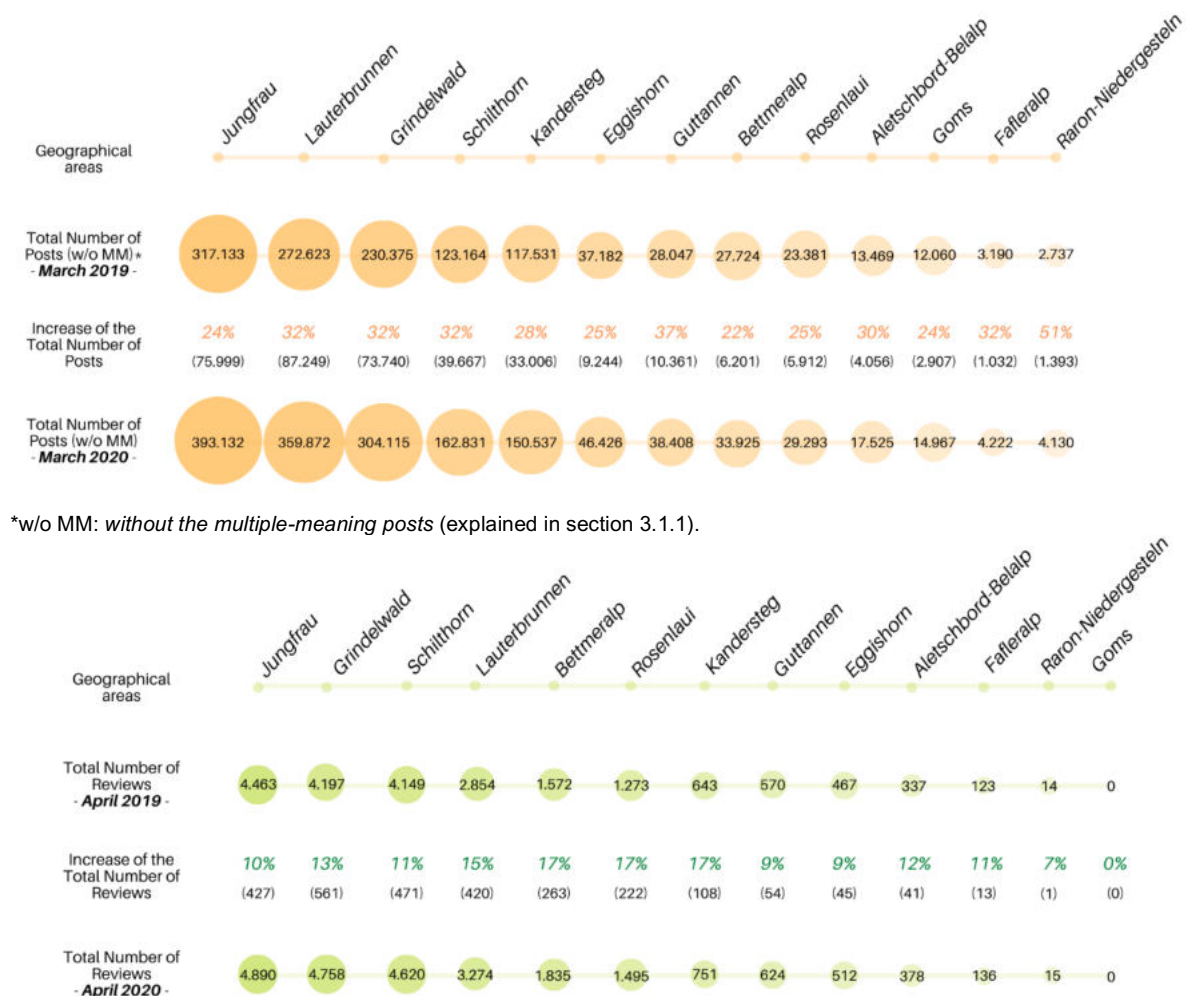


Figure 9 and 10. Monitoring results - Presence of geographical areas within the SAJA WH region on Instagram and TripAdvisor with the percentage of change between 2019 and 2020.

The percental increase of the total number of Instagram posts and TripAdvisor reviews can be interpreted as following:

- despite the similar increase rate, significant differences among areas can still be observed and therefore, their positions remain the same after 12 months,
- the popularity of the southern area is growing due to the social media strategies and plans developed and put into action by tourism responsible,
- the number of visitors is increasing,
- social media strategies and plans by tourism responsible in the northern area lack differentiation.

#### 4.1.2. Case of the Southern Area of the SAJA: Aletsch Arena

The following tables show:

- the results of the Instagram<sup>1</sup> analysis of the localities and tourist spots within the Aletsch Arena located in the southern part of the SAJA WH region (Table 6),
- the presence of tourism facilities – attractions and businesses – within the Aletsch Arena on TripAdvisor<sup>2</sup> and Airbnb<sup>3</sup> (Table 7).

Localities & spots	Hashtags	Multiple Meaning (%)	Total number of posts (w/o MM)		Changes	
			2019	2020	Absolute	(%)
Risihorn	<i>#Risihorn</i>	0	122	162	40	33
Bellwald	<i>#bellwald</i>	4	8.626	10.276	1.650	19
Art Bellwald	<i>#Artbellwald</i>	0	73	64	-9	-12
Bettmeralp	<i>#Bettmeralp</i>	2	24.378	29.574	5.196	21
Bettmerhorn	<i>#Bettmerhorn</i>	0	3.346	4.351	1.005	30
Belalp	<i>#Belalp</i>	1	10.836	13.602	2.766	26
Aletschbord	<i>#Aletschbord</i>	0	119	156	37	31
Hotel Belalp	<i>#Hotelbelalp</i>	0	140	205	65	46
Färrieha	<i>#Färrieha</i>	0	2	3	1	50
World Nature Forum	<i>#WorldNatureForum</i>	6	49	112	63	129
Moosfluh-Aletschwald	<i>#Moosfluh</i>	0	983	1.305	322	33
Pro Natura Zentrum	<i>#ProNaturaZentrumAletsch</i>	0	8	8	0	0
Belalp-Blatten	<i>#BlattenBelalp</i>	0	995	1.594	599	60
Hohstock	<i>#Hohstock</i>	0	132	181	49	37
Unterbächhorn	<i>#Unterbächhorn</i>	0	3	4	1	33
Gredetschtal	<i>#Gredetschtal</i>	0	40	54	14	35
Foggenhorn	<i>#Foggenhorn</i>	0	48	123	75	156

Alp Nessel	#AlpNessel	0	1	1	0	0
Massa River	#MassaRiver	20	2	6	4	200
Massa Gorge	#MassaGorge	0	13	14	1	8
Brigerbärg	#Brigerbärg	0	58	103	45	78
Gredetschtal	#Gredetschtal	0	40	54	14	35
Eggishorn	#Eggishorn	0	4.828	6.091	1.263	26
Aletschgletscher	#Aletschgletscher	2	17.119	21.508	4.389	26
Märjelensee	#Märjelensee	0	385	516	131	34
Riederalpbahnen	#Riederalpbahnen	0	8	12	4	50
Riederalp	#Riederalp	0	13.656	16.811	3.155	23
Riederfurka	#Riederfurka	0	753	928	175	23
Aletsch Forest	#Aletschwald	0	424	548	124	29
Tälligrat Tunnel	#TälligratTunnel	0	9	12	3	33
Grindinggletscher, Gasex, Blattnerschliecht, Ried-Mörel, Mund, Saffron Museum, Birgisch, Eschulbrunnu - Sumpter's Fountain, Säumerweg Moos, Ornovasso Tower, Bishop's Castle, Totuplata, Gentile's Stone, The Klingele House, Märjela, Hotel Jungfrau Eggishorn, Seilbahnstation Fiescheralp		Without hashtags				

Table 6. Presence of localities and tourist spots in the Aletsch Arena on Instagram (analysis period: March 19 - April 4, 2019 and 2020)

Localities	TripAdvisor				Airbnb			
	Total N°				Total N°			
	Listings		Reviews		Lodging rentals	Lodgings w/o reviews	Reviews	Reviews per lodging
	Attractions	Businesses	Attractions	Businesses				
Bellwald	8	23	38	441	52	17	392	11
Fieschertal	0	7	0	80	13	3	104	10
Fiesch	3	38	133	975	31	5	263	10
Ernen	5	14	131	265	19	6	298	23
Binn	2	8	4	195	4	1	35	12
Lax	0	2	0	2	6	0	64	11
Bettmeralp	1	37	223	1623	61	20	395	10
Grengiols	0	4	0	12	10	2	88	11
Bister	0	3	0	0	1	1	0	0
Mörel-Filet	3	13	5	438	21	1	303	15
Riederalp	3	37	150	999	115	54	794	13
Bitsch	0	1	0	1	4	0	143	36
Naters	6	20	41	365	18	4	347	25
Birgisch (+Mund)	0	1	0	4	5	1	71	18
Belalp	0	7	0	390	5	3	7	4
Blatten bei Naters	1	12	0	130	67	44	176	8
Brig (+Ried-Brig)	12	63	399	3590	16	6	434	43

Table 7. Presence of tourism facilities within the localities in the Aletsch Arena on TripAdvisor and Airbnb (analysis period: June 29, 2020).

The area around Bettmeralp and the Aletsch Glacier are the most present in Instagram and TripAdvisor together with Brig which has a high presence on TripAdvisor mainly due to the higher number of businesses (e.g. restaurants, hotels) compared to the other localities. The same localities have the highest presence on Airbnb together with Riederalp. However, the social media presence of the localities and tourism spots in the Aletsch Arena is rather low. Especially, attractions lack the listings and profiles on TripAdvisor.

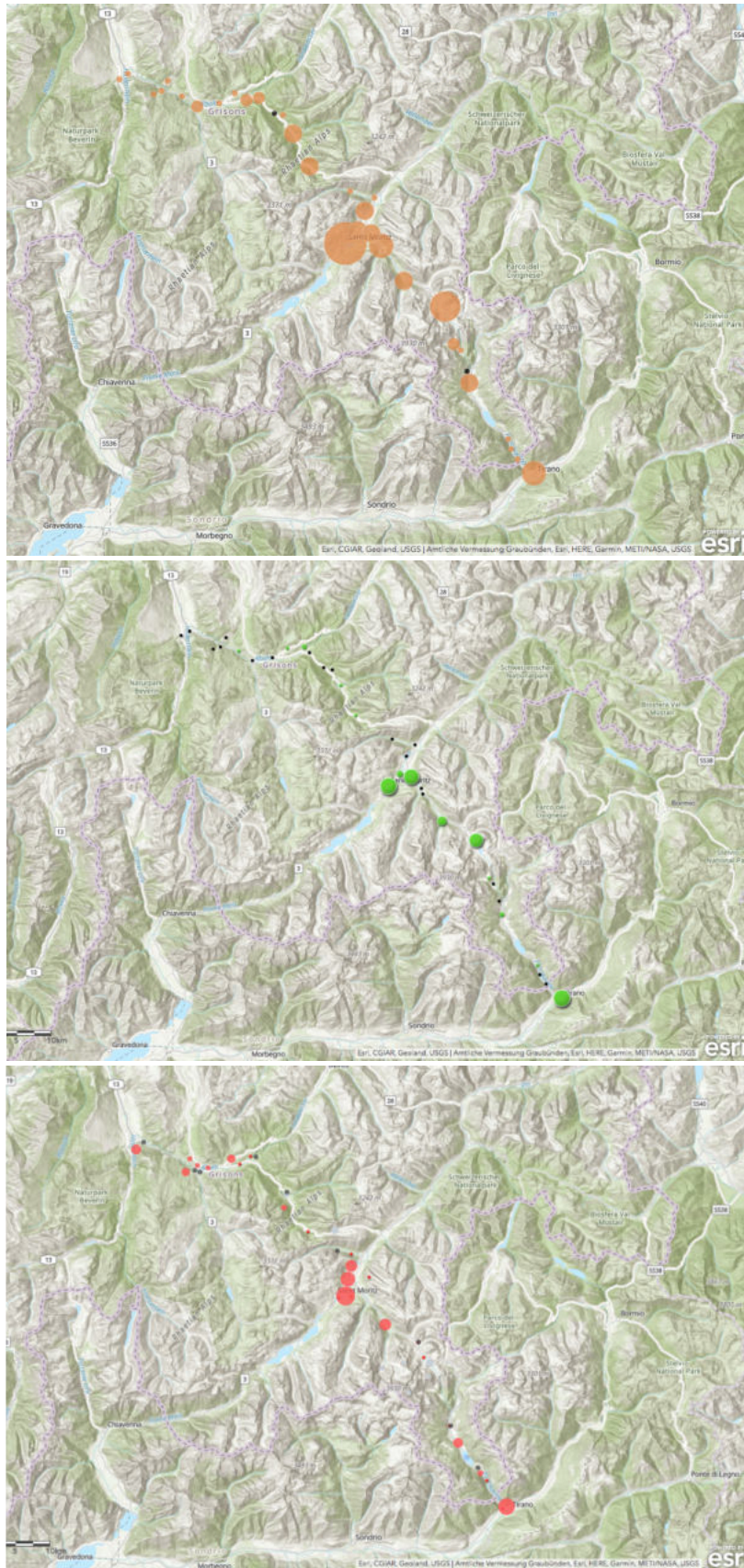
## 4.2. Case Study II: Presence of the RhB in Social Media

The data in Table 8 shows the presence of localities of the RhB in social media – Instagram<sup>1</sup>, TripAdvisor<sup>2</sup>, and Airbnb<sup>3</sup>. The results are visualized in Figures 11, 12, and 13.

Localities	Instagram	TripAdvisor		Airbnb			
	T o t a l   n u m b e r						
	Posts	Hotspots	Overall facilities	Lodging rentals	Lodgings w/o reviews	Reviews	Reviews per lodging
Thusis	79	0	418	5	1	261	65
Sils im Domleschg	523	0	16	0	0	0	0
Mutten	707	0	0	6	2	261	65
Alvaschein	195	14	20	1	0	1	1
Tiefencastel	3126	0	170	1	0	15	15
Surava	555	0	39	4	0	26	6,5
Alvaneu	828	30	105	10	1	240	27
Filisur	12430	103	334	10	4	30	5
Stuls	31	0	0	1	1	0	0
Bergün	11230	88	856	16	6	117	12
Preda	12824	54	41	1	0	3	3
Bever	3316	0	510	7	3	28	7
Samedan	13982	0	2807	52	10	572	14
Celerina	13434	198	2831	150	44	935	9
St. Moritz	382053	814	26436	249	63	2412	13
M. Muragl	9115	756	756	1	0	24	24
Pontresina	36667	0	9504	76	14	541	9
Morteratsch	14531	426	426	0	0	0	0
Bernina	91582	684	678	1	0	2	2
Poschiavo	20387	170	2448	31	5	309	12
Brusio	2072	8	109	3	0	112	37
Tirano	39180	870	14850	63	10	1518	29

Table 8. Presence of the localities within the RhB on Instagram, TripAdvisor, and Airbnb (analysis period: January 23-30, 2020).





Figures 11, 12, 13. Visualization of the results - Presence of the RhB on Instagram, TripAdvisor, and Airbnb (January 23-30, 2020). Map image: Copyright © Esri and its licensors / Created by: Sormaz A.

The area with the highest presence across the three analyzed social media platforms is the Upper Engadin – in particular, St. Moritz (382.053 Instagram posts, 26.436 TripAdvisor, and 2.412 Airbnb reviews). It is followed by the Bernina area on Instagram and Pontresina and Tirano across all the three platforms. The least present are Thusis, Alvaschein and Stuls located in the northern part of the RhB WHS.

The central area – the Upper Engadin - is historically well-known and longer visited than the rest of the site. The area is inhabited and is home to popular events. Due to these facts, the easy access and crossing of RhB lines, international visitors are more present in the central part compared to the other parts of the RhB WHS. The southern part – Tirano - is a popular pilgrimage place which has a great impact on its social media presence – particularly, on TripAdvisor.

### **4.3. In-Depth Interviews and Feedback Discussions with Tourism Responsible in WH sites**

The in-depth interviews and discussions are conducted after the analysis (between June 25 – October 28, 2020). The aim is to examine the perception of tourism responsible regarding the overall analysis, results, and recommendations and to serve as the foundation for the Feedback Tourism Economy (chapter 6.4.).

#### *Participants and their professional engagements*

- Aniela Luder, Content Manager, Aletsch Arena AG
- Jasmine Noti, Product and Market Manager, Aletsch Arena AG
- Noemie Amacker, Marketing and Communication Intern, Aletsch Arena AG
- Sonja Dähler, Head of Marketing and Event/Vice Director, Obergoms Tourismus AG
- Sarah Patricia Payer, Project Assistant of the Landwasserviadukt–Wahrzeichen Graubündens and Assistant at the RhB UNESCO World Heritage
- Kaspar Howald, Director of Valposchiavo Turismo

#### *Main tourism products and services communicated by organizations*

Participants from the southern part of the SAJA WH explain that the main tourism products and services communicated by their organizations are related to natural heritage and beauty – mainly, the Aletsch Glacier – as well as sport activities and

events. Within the RhB WH, the main products and services are related to the railway line. Along the Albula line, products such as Landwasser Viaduct, railway museums, and nature-based attractions such as theme hiking trails and guided journeys through time are among the main products. In Valposchiavo, the valley in the southern part of the site (Bernina line), the main products are presented through different packages and experiences such as sport activities, local products, glaciers, museums.

#### *Marketing channels used to communicate tourism products and services*

Marketing channels used by organizations that participated in the discussion are diverse – from traditional channels such as billboards, posters, flyers, magazines, TV - to new media – in particular, social media and other institutional websites. According to Dähler, tourism responsible in the southern area of the SAJA have established a joint website which makes it easier for visitors to find tourism-related information about the area in one place (discussion, June 25, 2020). The primary social media platforms, used by the organizations and participants in the feedback discussions to foster connections among people with similar interests, are Facebook and Instagram and TripAdvisor in case of the Landwasserwelt in the Albula Valley.

#### *The aim of the social media presence*

Presence of the SAJA's southern area in social media is to communicate natural beauty and to attract more visitors. There is no strategy in terms of what organizations aim to achieve with the presence in social media in a short- and long-term. As Luder explains, plans are mainly related to the way of speaking to the guests and posting activities (discussion, June 25, 2020).

The RhB led social media profiles aim at presenting tourism products and services within the WH site to already existing and potential visitors. Payer explains that, from the Landwasserwelt and the project side, “the goal is to reach potential guests over the social media presence; in addition, people who had already been in the Landwasserwelt may give valuable feedback and even call the attention of their friends; it surely also is the goal to establish an active online community” (discussion, October 28, 2020). Howald, the tourism responsible from Valposchiavo, highlights the importance of maintaining contact with regular visitors and keeping memories alive through the use of social media (discussion, September 18, 2020).

### *Management activities*

Tourism responsible within the southern part of the SAJA WH believe that there are no overcrowding issues since there are four existing spots where visitors can admire the Aletsch Glacier – i.e. the main tourism product in the area. The organization – Aletsch Arena - therefore, does not imply any managing activities, does not obtain statistics regarding visitor flow, and is not aware of other managing activities in the area (i.e. those of other organizations).

Management activities in the area of the Landwasserwelt are planned to be developed within the next phase of the Project Landwasserviadukt. Within the area, tourism is managed to a minimum degree mainly by the municipality and local tourism organizations. In Valposchiavo, management activities are related to product management and coordination of activities of local partners.

### *ICTs and social media in tourism to heritage destinations*

All participants agree that digital technologies and social media are very important for today's travelers. During the discussions, a special focus was on the pre-trip phase of traveler's journey. This phase is related to inspiration and participants believe that generating content in social media can inspire other users and, at the same time, potential visitors. Participants from the SAJA believe that UGC in social media is more inviting and seems less as an advertising compared to the content communicated through traditional media – often perceived as paid promotion. According to Luder, Noti and Amacker, social media are the most important in the pre-trip phase and are also important in other phases of traveler's journey (discussion, June 25, 2020). Apart from their importance in the pre-trip phase, Dähler highlights the importance of ICTs and social media in the during-trip phase – especially, because of the digital guest tickets (discussion, June 25, 2020).

Payer explains that they are important in all the phases but mostly in the pre- and post-trip phase while during the trip the program is already set and it is harder to make changes (discussion, October 28, 2020). Howald highlights the importance of ICTs and social media in the post-trip phase and explains that the organization he directs – Valposchiavo Turismo – is focused on this phase of traveler's journey.

### *Perception towards the social media analysis outcome*

Due to the fact that the Aletsch Glacier is well known, the representatives of the southern part of the SAJA expected that its presence on the three analyzed platforms will be higher. As for the RhB WH, surprising is the fact that even though the upper part of the Albula line is less present on TripAdvisor, there are more Airbnb possibilities.

### *Perception towards the recommendations*

The 5W Social Media Action Plan, storytelling, the World Heritage hashtags, signs and installations are some of the recommendations that arose from the study and that heritage sites can benefit from. Representatives of both sites expressed readiness to use most of them. In the southern part of the SAJA, they highlight the importance of storytelling and also, believe that “signs and installations could be beneficial not only in terms of generating the content but also for informative purposes – e.g. sometimes, people reaching the Fiescher Glacier confuse it with the Aletsch Glacier” (Noti, discussion, June 25, 2020). Also, they believe that a GIS-based mobile application is a good idea but, since there is no overcrowding in the area, there is no need for such application yet - anyhow, it is something to think about for the future and could be especially useful for cable car companies in the area.

Payer explains that the suggested recommendations are highly suitable for a heritage area; the educational workshops might be especially useful in the Albula Valley; for the launch of the Landwasserwelt in 2022 all the recommendations sound promising and may be implemented step by step as well as in the relation with the RhB UNESCO WH (discussion, October 28, 2020). Also, according to Howald, the recommendations are suitable - mostly, those that would foster collaboration between local partners.

### *Perception towards the overall study*

The SAJA representatives highlight the usefulness of the overall study. In particular, they think that the analysis is something that the whole WH Region can benefit from. The study shows whether the organizations responsible for tourism are in a good direction and what are the areas and spots with the need for improvement in terms of communication. Therefore, a joint project between tourism responsible within the SAJA WH Region and the research institution could be realized.

According to Payer, both the social media and the monitoring analysis generate important insights which can be used to define new strategies and explains that she would use such study in the future (discussion, October 28, 2020). Howald explains that the study is more useful for those organizations that aim at attracting international visitors and that they are ready to observe the future development of the social media presence of the analyzed hashtags together with the Rhaetian Railway company (discussion, September 18,2020).

## Chapter 5: Discussion

The concentration of visitors over the area of both WH sites is mainly observed in the northern part of the SAJA and the central part of the RhB. Considerable differences between parts within these WH sites can be observed through their presence in social media. The differences are due to the marketing activities applied by tourism responsible, management activities concerning visitor flows, popularity of certain areas compared to the others and therefore, the higher number of visitors in these areas or spots, as well as the differences in the culture of communication among tourism segments. While some nationalities tend to express their opinions publicly, others are more reluctant which can have an impact on data collected on TripAdvisor and Airbnb.

Factors that contribute to the increase in the number of visitors and to the complexity of their flows are:

- historical facts,
- tourism infrastructure (availability of accommodation facilities, attractions, etc.),
- access (availability of services – e.g. railway lines, roads, paths),
- seasonality,
- clustering (grouping different tourism products and services),
- marketing activities,
- fame due to the presence in media,
- level of the tourism development in heritage areas.

Historical factors that have influenced the development of tourism in an area stay deeply embedded and continue to influence future development opportunities.

Certain areas are historically longer visited and more popular than others. In the early 18<sup>th</sup> century, British travelers first visited the northern part of today's SAJA WH region – in particular, Interlaken, Lauterbrunnen, Kandersteg, etc. They continued to explore Switzerland by visiting the Upper Engadin – the central part of today's RhB WHS. The spatial movement of people and goods influenced the development of tourism in these areas. Consequently, tourism contributed to spatial development further to social and economic development. Tourism influenced spatial planning in terms of infrastructure

and access to the areas. The SAJA and the RhB WH sites are easily reachable and can be visited in one day from almost any part of Switzerland (especially, in the case of the SAJA).

Attractive tourism offerings and the good connectivity in terms of transport, make these areas prone to *hit and run tourism* coming mainly from densely settled places outside WH sites. Tourism segments are diverse – from mountain sports, railway, nature and culture enthusiasts to scientists. Due to their long experience in the sector and knowledge about tourism, the northern part of the SAJA and the central part of the RhB show success in marketing activities. All these factors significantly contribute to the increase in the number of visitors and the complexity of visitor flows which is reflected on their presence in social media.

Tourism management concepts have been included in the management plans of the two WH sites to prevent negative impacts on natural and cultural values (Ruoss and Sormaz 2020b). Selected sites have railway and cable car lines operating inside and outside the WH perimeter – i.e. inside the core and buffer zones. To a certain extent, visitor flows can be monitored based on the train and cable car frequencies. On the other hand, visitor flows and their behavior outside these lines cannot be monitored using the same data - e.g. within a group of attractions and services, ski slopes, hiking trails, etc.

However, the results of the feedback discussions show that:

- data concerning visitor flows is scarce or not existing in the majority of the areas and spots within the SAJA and the RhB,
- there are no concrete strategies and plans developed concerning visitor flow management (except from those implemented by the Jungfrau Railway that limited the number of passengers travelling to the Jungfraujoch),
- tourism-related marketing activities are mainly focused on landscape and already well-known spots inside the WH perimeters and less on the hidden treasures which is confirmed with the analysis of social media,
- tourism responsible emphasize the importance of social media in the pre- and post-trip phases of traveler's journey.



The lack of balance between management (including conservation and sustainable development) and marketing activities are confirmed by the social media analysis. This creates unbalanced visitor flows – i.e. certain areas and spots are getting exponential visibility while others are little popular (known mainly to local communities). Unbalanced visitor flows contribute to unbalanced and unsustainable social, environmental and economic development in heritage areas.

## **Chapter 6: Conclusions and Recommendations Towards Balanced and Sustainable Tourism in Heritage Destinations**

This chapter presents recommendations towards balanced and sustainable tourism in heritage destinations. Furthermore, the chapter summarizes the findings of the study and answers the question: *Are social media a growing opportunity or a threat for heritage destinations?*

### **6.1. From DMOs to DMMOs: New Role and New Opportunities**

As previously explained (section 2.1.), the majority of the destinations engage in either marketing or management serving as DMOs. Sustainable tourism practices require marketing strategies and plans to be in line with those of management considering not only management of products and services, networks, and resources (e.g. human, time, and financial) but also conservation and especially directing visitor flows as one of the main components of tourism management. In other words, DMOs need to take a role of DMMOs-Destination Management *and* Marketing Organizations.

Tourism management and marketing need to be inseparable activities – i.e. creation of destination marketing strategies and plans depends on and supports destination management strategies and plans. This way, balancing visitor flows and creating values for local communities, businesses, and other relevant actors within the whole destination will be more convenient as well as the creation of post-crisis scenarios in regard with tourism recovery and visitor flow management.

### **6.2. Heritage Stewardship Destinations: Overview**

A changed tourism paradigm needs to be based on local evidences, giving priority to products and services that respect the values of the heritage area. The *Heritage Stewardship Destinations* present a framework focusing on quality tourism, involving all the actors, creating added values for local and visiting communities, and offering “opportunities to jointly engage in the conservation of their heritage, to improve their

own living standards and experience, and to share equally costs and benefits” (Sormaz and Ruoss 2020a, 15; Ruoss and Sormaz 2020a, 153).

The Heritage Stewardship Destinations are based on the three-dimensional governance and management systems: top-down, bottom-up and outside-in (Figure 14).



*Figure 14. The holistic approach of territorial governance is based on local evidences engaging the three dimensions: Top-down, Bottom-up, Outside-in. Graphic: FelderVogel Communication / Figure source: Ruoss and Alfarè 2020.*

The framework for Heritage Stewardship Destinations incorporates:

- assessment of human, financial and time resources needed for the implementation of the framework,
- assessment of the carrying capacity – i.e. the vulnerability to the human spatial movement within the heritage area and “the level of visitor use an area can accommodate with high levels of satisfaction and little impact” (European Commission 2003, 42),
- tourism management strategies and plans that involve resource management, visitor flow management, and other tourism-related management activities,

- tourism marketing strategies and plans that are in line with those of management and involve online and offline solutions (section 6.3.),
- the creation of a two-way communication among heritage destination stewards - local and visiting communities and individuals, site management, tourism responsible, and other relevant public agencies and private enterprises on local, regional, and international level,
- the creation of destination stewardship councils involving all relevant heritage destination actors (Tourtellot 2018),
- the implementation of the Feedback Tourism Economy (section 6.4.)

The framework helps tourism responsible understand where the threats and opportunities are, where do they come from, and how to react accordingly. The Heritage Stewardship Destinations seek equilibrium between social, economic, and environmental factors.

### **6.3. Online and Offline Solutions**

Based on the analysis results and the overall understanding of the needs of heritage sites, solutions that can be applied in the online and offline environment are created and presented in following sections (6.3.1, 6.3.2, 6.3.3.).

#### **6.3.1. Social Media Action Planning**

The Social Media Action Planning (SMAP) is focused on understanding the heritage destination, its values, and perceptions of locals and visitors. The foundation of the SMAP is the two-way communication between hosts (local communities, individuals and organizations) and visitors. From evaluation to monitoring, it comprises of eight steps presented in Figure 15.



Figure 15. Social Media Action Planning (SMAP) process.

*Evaluation* of social media means to evaluate and select the platforms relevant for tourism and heritage destination itself - considering the region and audiences. Methodology, previously established, is used to *analyze* each platform. *Visualization* of the analysis outcome helps to understand the possibilities and the obstacles (e.g. in visitor flow management, marketing activities, etc.) and to react accordingly. As part of the *Social Media Strategy*, heritage destination actors need to define the direction for communication and management:

- *What do we want to achieve with the social media presence in a short- and long-term?*

A successful Social Media Strategy benefits from the connectedness between platforms (visible and “hidden”) and offline activities. Concrete actions can be identified and implemented with the *5W Action Plan* (Figure 16). These are:

- *Who* does what? - who creates, shares the content, creates connections, encourages social interactions,
- *Whom* is the content addressed to? - i.e. preferable audiences,
- *Where* to connect with preferable audiences? – a selection of social media platforms and unique hashtags,
- *When* to interact with preferable audiences? – defining when to share the content and to encourage interactions, the creation of a content calendar,

- *What* type of content to communicate? – e.g. educative, awareness raising, informative.



Figure 16. 5W Action Plan scheme.

When deciding on the content (*What*), it is important to consider all the values of the destination - e. g. its special and tactile values such as those of built heritage as well as intangible such as traditional building techniques, customs, etc. In other words, to bring the spirit of the destination closer to the audiences and to communicate not only highlights but also spots *off the beaten path* (i.e. less known).

The next step of the SMAP (Figure 15) is to *identify relevant key performance indicators (KPIs)*. The emphasis is on the two-way communication and values creation for all heritage actors (rather than the number of followers). *Implementation* of these strategies and plans forms the basis for the impact assessment during periodic *monitoring*. The SMAP is story-led and community- and interaction-centered.

### 6.3.2. GIS-Based Mobile Application

Information and Communication Technologies (ICTs) – in particular, mobile technologies – have been used by sites management to connect with the audiences through the interpretation of the heritage values. Furthermore, Geographic Information Systems (GISs) offer great opportunities for the development of tourism-planning-related applications based on data collection and analysis, and data interpretation using maps (Ruoss and Alfarè 2013; Jovanovic and Njegus 2008). Since the carrying

capacity may differ within the territory (Ruoss and Sormaz 2020b), a GIS-based mobile application can provide real-time information regarding visitor flows in the area.

A map, integrated in the application, provides insights into those spots which have reached their carrying capacity offering visitors an alternative – i.e. spots that are less visited at that moment.

### **6.3.3. Multifunctional Installations**

The hashtags help social media users to connect with one another and with destinations and companies that offer products and services they are interested in. As the study shows, the content shared in social media can be used to monitor visitor flows. Visitors need to be invited to use the hashtags of the spot and/or area. The hashtags can be communicated through the content generated *online* - e.g. on official websites and social media accounts of site management and tourism organizations - and *offline* - e.g. using signs.

Art installations, frames and signs made by local artists and craftsmen are a great way to communicate the unique hashtags of an area and/or spot. An example are marks which show visitors where to stand to take a *perfect* photo or frames with a call-to-action inviting them to share their photos using the unique hashtag of the spot. This way, visitors and locals are invited to share their stories online (through visual and textual content) which gives the access to their impressions and opinions to tourism responsible. These impressions can be used as well in storytelling or promotional activities.

### **6.3.4. The Art of Storytelling as Part of Heritage Interpretation**

The more the aspects of cultures become globalized, the higher the possibility for awareness raising and education but also risk for these aspects to be misunderstood. People have rarely been educated on how to participate in visiting heritage destinations. Social media can improve accessibility to the natural and cultural heritage values interpreted in an understandable and enjoyable way to local communities and potential and existing visitors. As Tilden (1977, 9) explains, “interpretation is revelation based upon information”. Through the storytelling as part

of the interpretation of heritage values, tourism responsible can raise awareness, enhance education and local and visitor's experience regarding heritage values and sites as encounters of people, cultures, and nature, which can be done using social media.

Heritage values and the importance of their preservation can be communicated offline, too. Art installations, frames and signs are a great way towards heritage interpretation. Also, historical figures brought to life can be facilitators of the message addressed to local and visiting communities by the heritage site (metaphorically) using storytelling. Ideally, the message is curated together with local communities (collecting their stories) and visitors (collecting impressions shared through UGC in social media).

Visually impaired visitors to heritage destinations are also users of social media. To make the message and the site accessible to them, installations should contain audio material and touching objects giving them a possibility to enjoy the beauty of the heritage. These objects can generate a sensation and emotion derived from personal tactile dialogues with heritage for both visually impaired and sighted visitors.

#### **6.4. Feedback Tourism Economy**

The Feedback Tourism Economy (FTE) is introduced here and developed on the idea of the feedback economy, which means using customer feedback to “empower future business decisions” (Business Reporter, n.d.; Forbes 2020). The FTE incorporates not only the customers' (i.e. visitors') perspective but the perspective of all tourism actors relevant for a destination – local and visiting communities, heritage site management, tourism responsible, other relevant public agencies and private enterprises on local, regional, international level.

Figure 17 shows the feedback loop and interactions among these actors.





Figure 17. The feedback loop within the Feedback Tourism Economy (FTE).

The feedback flows as following:

- Local communities and individuals provide their feedback to heritage site managers and other tourism responsible - and the opposite: the feedback starts from tourism responsible (e.g. in case when they provide feedback on other actors' involvement in tourism projects in the area),
- Partners from science, communication and technology provide feedback to the three central actors (local communities and individuals, heritage site management, other tourism responsible) – e.g. about the preservation and interpretation of heritage values within the destination and ways in which they can be improved. Central actors provide their feedback about the data or recommendations to the partners from science, communication and technology. This type of feedback can be collected using in-depth interviews and feedback discussions (as shown in sections 3.3. and 4.3.).
- Visiting communities and individuals provide their feedback about tourism products, services, and the overall atmosphere at the destination in the form of reviews and posts in social media or other channels. Feedback is then accessed by the other actors of the FTE. Also, visitors receive feedback from these actors related to visitor flows and behaviours.

The availability and wealth of information shared between different heritage destination actors creates values for the whole destination and beyond. An example are visitors' reviews shared in social media. Potential visitors to the destination can access the information using the same (social media) channels and get an absolute

value – “a sense of what it’s like to own or use the goods [visit the destination] they’re considering” (Simonson and Rosen 2014). The same information can be used by heritage site managers and other tourism responsible for management and marketing activities.

Another example are seminars and workshops organized by DMMOs (or other relevant actors) with partners (e.g. tourism responsible, hotels, lodging rentals, restaurants, tour operators) within the heritage destination aiming at feedback discussions and capacity building – e.g. about the importance and efficient use of social media for tourism management and marketing.

The Feedback Tourism Economy (FTE), driven by the perception of all actors, creates continuous learning processes and opportunities for improvement.

## **6.5. Social Media – A Growing Opportunity or a Threat for Heritage Destinations?**

The way heritage destinations are interpreted in social media by all heritage destination actors has a significant impact on visitor flows in heritage destinations. Therefore, the presence of these actors in social media is of great importance for the whole heritage destination.

Social media reflect the tourism development as well as the reasons for unbalanced visitor flows (e.g. historical facts, availability of tourism infrastructure, access, seasonality, clustering, marketing activities, fame due to the presence in media, level of the tourism development; section 5.1.). The study shows that the social media analysis can be an effective tool to examine visitor flows in heritage destinations. The analysis outcomes can help tourism responsible to understand these flows and behaviors, to develop visitor flow management strategies and plans, and to implement them by leveraging different social media platforms.

Understanding the phases of traveler’s journey and the touchpoints with social media is crucial in order to strategically apply what has been learned from the social media analysis and its results. Traveler’s digital and physical worlds are tightly weaved and form the so-called “*digical world*”. Social media take a significant role in the digical

world. Figure 18 is a visual representation of the social media presence in traveler's journey.



Figure 18. Presence of social media in traveler's journey.

Travelers get *inspiration* for their next trip using social media. Inspiration is derived from spontaneous finding or intentional information gathering. They actively evaluate the options and make bookings through social media as part of *planning*. *On-trip experiences* happen between planning and the end of the trip – i.e. getting to the destination, staying in accommodation facilities, meeting local people, living local experiences, etc. During this phase, travelers record and share their moments using social media. *Post-trip memories* relate to travelers' opinions and impressions from the trip as well as their nostalgic moments shared after a certain period. These are expressed in the form of reviews and posts in social media. People tend to visit the same destinations multiple times. Therefore, post-trip memories can initiate dreaming about already visited destination and inspire next trips – i.e. from post-trip memories to inspiration and other phases of traveler's journey.

Social media strategies and action plans can support site management and other tourism responsible in heritage destinations to:

- be present in all the phases of traveler's journey,
- connect with potential and existing visitors,
- bring the spirit of an area closer to the audiences,

- analyse, monitor and manage visitor flows and behaviour,
- distinguish between overloaded and less-visited heritage areas and spots,
- understand the evolution of impacts and changes (e.g. retirement of glaciers, deterioration and reconstruction of heritage ruins, positive and negative changes in the quality of tourism businesses and their products and services, etc.) - i.e. user generated content is a testimonial of a development,
- understand heritage spots at risk and, if needed, to organize security staff accordingly,
- communicate alternative spots to visit in periods of high pressure,
- understand management and marketing activities within the area,
- understand the development of hospitality services in the area - official and unofficial,
- examine the way the heritage destination is perceived by visitors,
- raise awareness and respect towards heritage values and local communities,
- educate about important issues facing heritage,
- facilitate interactions and strengthen relationships between local, visiting communities, site management, and other relevant destination actors,
- foster an effective and cooperative commitment between site management and other relevant tourism actors.

It is crucial to consider the differences among heritage destinations when implementing strategies and plans presented in the study. In case of the SAJA, visitor flows can be monitored within the WH perimeter and the whole WH region using social media. In case of the RhB WH perimeter - i.e. the Thusis-St.Moritz-Tirano railway line - social media can be used for awareness raising, interpretation of heritage values, capacity building. Here, visitor flow management requires data collected, analyzed, and monitored by the railway company. In case of the RhB WH buffer zones, in addition to awareness raising, heritage interpretation, and capacity building, social media can be used to manage visitor flows – e.g. in the areas such as Albula and Poschiavo Valley.

Effective destination management and marketing depend on different factors (e.g. availability of resources, strategy, effective implementation, leadership, etc.) and aim to enhance the competitiveness and sustainability of heritage destinations while

creating a harmonious relationship between local and visiting communities and all the other heritage destination actors.

## **6.6. Criticism and Future Research**

### *Criticism*

The author has determined possible critical points of the study as following:

- The social media analysis presented in the study is related to two UNESCO WH sites – the SAJA and the RhB. Thus, the study lacks examples of other heritage destinations in order to justify the accuracy of the methodological approaches. However, during the time period allocated to this study, social media analyses of other heritage destinations have been conducted. The analyses and their outcomes have demonstrated a consistency with the study of the two WH sites presented here.
- The scope of the content generated on Instagram requires sampling as a research method. The author considered incorporating the software programs in the study. Since available programs were considered inefficient for this type of study, it does not incorporate any of the software programs. However, the outcome of the Instagram analyses demonstrated a consistency in all the case studies (those reported here as well as those reported in other authored and co-authored publications).
- The terms over- and undertourism are used in the study to describe the issues related to and caused by overexploitation and/or non-employment of destinations' resources. The author emphasizes the problematicity of these terms since they simplify the complex issues mentioned above. In future studies, the author recommends different factors to be considered – e.g. the level of negative and/or positive impacts, dynamics within the destinations leading to unbalanced visitor flows, areas with the need for improved clustering and tourism enhancement, etc.

### *Future Research*

Data gathering is greatly simplified which enables the application of the social media analysis on other heritage destinations. Also, the application of the Heritage Tourism Destinations framework could bring benefits to all involved actors and could be done

in a co-operation with tourism responsible on local, regional, and international level (e.g. site management centers, tourism organizations, other relevant public agencies and private enterprises).

The social media content analysis presented in the study, is based on the number of the messages (i.e. posts and reviews) which is used as a foundation for the creation of management and marketing strategies and plans – especially, those related to visitor flow management. Analyzing not only the number of the messages but also their textual and visual elements would enrich the study – especially, the part related to the visitors' perceptions towards heritage destinations.

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## Notes

1. The Instagram data presented in the study has been retrieved from:  
<https://www.instagram.com>. Last access June 30, 2020.
2. The TripAdvisor data presented in the study has been retrieved from:  
<https://www.tripadvisor.com>. Last access June 30, 2020.
3. The Airbnb data presented in the study has been retrieved from:  
<https://www.airbnb.com>. Last access June 30, 2020.

Maps throughout this thesis (Figures 6, 7, 8 and 11, 12, 13) were created using ArcGIS® software by Esri. ArcGIS® and ArcMap™ are the intellectual property of Esri and are used herein under license. Copyright © Esri. All rights reserved. For more information about Esri® software, visit [www.esri.com](http://www.esri.com).

## **Appendix**

Appendix 1: List of analyzed areas and tourist spots within the SAJA UNESCO WHS.

Appendix 2: List of analyzed areas and tourist spots within the RhB UNESCO WHS.

Appendix 3: List of the recommendations incorporated into the in-depth discussions.

## Appendix 1: List of analyzed areas and tourist spots within the SAJA UNESCO WHS.

Analyzed areas/spots with the hashtags	Instagram					TripAdvisor	
	Total number of posts within the hashtags 2019 (A)	Total number of posts within the hashtags 2020 (B)	% of the Multiple-Meaning posts within the sample (C)	Total number of area/spot-related posts - w/o MM 2019 (A-C%)	Total number of area/spot-related posts - w/o MM 2020 (B-C%)	Total number of reviews 2019	Total number of reviews 2020
<b>Jungfrau</b>				<b>317133</b>	<b>393132</b>	<b>4463</b>	<b>4890</b>
#jungfrau	264916	313050	31	182792	216005		
#jungfraujoch	129152	168451	/	129152	168451		
#jungfraubahn	3462	6305	/	3462	6305		
#konkordiaplatz	571	772	2	560	757		
#sphinxobservatory	840	1231	4	806	1182		
#icepalacejungfraujoch	16	28	/	16	28		
#alpinensation	374	448	21	295	354		
#jungfrauigerwalk	51	51	1	50	50		
<b>Lauterbrunnen</b>				<b>272623</b>	<b>359872</b>	<b>2854</b>	<b>3274</b>
#auterbrunnen	147761	206791	6	138895	194384		
#staubbachfall	4929	7693	/	4929	7693		
#wengernalp	1038	1101	/	1038	1101		
#guggigletscher	6	6	/	6	6		
#auterbrunnental	1935	2198	/	1935	2198		
#wengen	72672	91750	2	71219	89915		
#männlichen	9339	12145	28	6724	8744		
#honegg	2937	3376	/	2937	3376		
#kleinescheidegg	29062	32393	/	29062	32393		
#mittellegihütte	153	229	/	153	229		
#geigergletscher	2804	3072	/	2804	3072		
#geigertrail	3789	4797	63	1402	1775		
#seigernordwand	11275	14787	4	10824	14196		
#alpiglen	644	722	/	644	722		
#wengeneralpbahn	51	68	/	51	68		
<b>Grindelwald</b>				<b>230375</b>	<b>304115</b>	<b>4197</b>	<b>4758</b>
#grindelwald	316657	412848	36	202660	264223		

#fingstegg	1327	1742	1	1314	1725	
#milchbach	34	43	/	34	43	
#schwarzlutschine	2	3	/	2	3	
#untererlauchbühl	1	1	/	1	1	
#firstrahn	561	771	/	561	771	
#grossescheidegg	2695	3638	1	2668	3602	
#grindelwaldfirst	10869	17443	5	10326	16571	
#bachalp	111	130	/	111	130	
#bachalpsee	13021	17530	5	12370	16653	
#bachläger	14	21	/	14	21	
#waldspitz	327	387	4	314	372	
<b>Schilthorn</b>				<b>123164</b>	<b>162831</b>	<b>4149</b>
#schilthorn	41265	54494	/	41265	54494	<b>4620</b>
#schilthorn007	979	1480	/	979	1480	
#007walkoffame	22	36	/	22	36	
#thrillwalk	1829	2667	3	1774	2587	
#almuseum	23	41	6	17	35	
#trummelbachfalls	3713	4850	/	3713	4850	
#stechelberg	4282	5876	/	4282	5876	
#murren	44689	59424	5	42455	56453	
#griesalp	1313	1748	/	1313	1748	
#pochtenfall	207	290	/	207	290	
#dündenfall	5	5	/	5	5	
#schingelsee	173	244	/	173	244	
#gimmelwald	12185	15201	4	11698	14593	
#breithorn	10900	14168	/	10900	14168	
#schmadribach	19	22	/	19	22	
#trachsellauenen	79	133	/	79	133	
#stechelberg	4306	5876	1	4263	5817	
<b>Kandersteg</b>				<b>117531</b>	<b>150537</b>	<b>643</b>
#kandersteg	61439	77210	/	61439	77210	<b>751</b>
#oeschensee	43500	58400	/	43500	58400	
#underbärgli	10	18	/	10	18	
#oldenhorn	529	637	7	492	592	
#gastental	1468	1851	/	1468	1851	
#kiental	3878	4926	/	3878	4926	
#filfalle	1	2	/	1	2	
#ötschbergtunnel	218	298	1	216	295	
#legetosse	16	23	1	15	22	



#hotelsteinbock	203	227	/	203	227	
#oldenhorn	529	637	7	492	592	
#oberbärgli	115	160	/	115	160	
#öschensee	2561	2694	/	2561	2694	
#oeschibach	22	23	/	22	23	
#blüemlisalp	2976	3710	5	3119	3525	
<b>Eggishorn</b>				<b>37182</b>	<b>46426</b>	<b>467</b>
#eggishorn	4828	6091	/	4828	6091	
#aletschgletscher	17468	21947	2	17119	21508	
#märlensee	385	516	/	385	516	
#riederalpbahnen	8	12	/	8	12	
#riederalp	13656	16811	/	13656	16811	
#riederfurka	753	928	/	753	928	
#aletschwald	424	548	/	424	548	
#älligrattunnel	9	12	/	9	12	
<b>Guttannen</b>				<b>28047</b>	<b>38408</b>	<b>570</b>
#guttannen	1685	2536	/	1685	2536	
#gersteneegg	4	22	/	4	22	
#gelmerbahn	3538	5797	44	1981	3246	
#grimselpass	19519	26396	3	18933	25604	
#grimselhospiz	1205	1395	/	1205	1395	
#innerkirchen	1872	2521	/	1872	2521	
#gaulhütte	214	353	/	214	353	
#gaulglacier	13	18	/	13	18	
#gaulisee	9	15	/	9	15	
#urbachtal	297	401	/	297	401	
#mattenalpsee	34	22	/	34	22	
#äterichsbodensee	203	239	/	203	239	
#hotelhandeck	25	32	/	25	32	
#viasbrinz	41	55	/	41	55	
#aaregletscher	11	14	/	11	14	
#grimselsee	1382	1768	/	1382	1768	
#spitallamdam	4	5	/	4	5	
#unteraargletscher	140	169	4	134	162	
<b>Bettmeralp</b>				<b>27724</b>	<b>33925</b>	<b>1572</b>
#bettmeralp	24876	30178	2	24378	29574	
#bettmerhorn	3346	4351	/	3346	4351	
<b>Rosenlaui</b>				<b>23381</b>	<b>29293</b>	<b>1273</b>
						<b>1495</b>

#rosenlauri	2750	4007	1	2723	3967		
#hotelrosenlauri	37	50	/	37	50		
#rosenlauriigletscher	273	429	/	273	429		
#reichenbachbahn	10	13	/	10	13		
#reichenbachfall	17208	18001	53	8088	8460		
#sherlockholmesmeiningen	7	124	/	7	124		
#rosenlaurischlucht	380	570	/	380	570		
#aareschlucht	10716	13941	/	10716	13941		
#gschwandenmad	10	77	/	10	77		
#schwarzwaldalp	741	1009	/	741	1009		
#rufenen	7	3	/	7	3		
#reichenbachtal	389	650	/	389	650		
<b>Aletsch-Belalp</b>				<b>13469</b>	<b>17525</b>	<b>337</b>	<b>378</b>
#belalp	10945	13740	1	10836	13602		
#aletschbord	119	156	/	119	156		
#hotelbelalp	140	205	/	140	205		
#färricha	2	3	/	2	3		
#worldnatureforum	55	119	6	49	112		
#moosfluh	983	1305	/	983	1305		
#pronaturazentrumaletsch	8	8	/	8	8		
#blattenbelalp	995	1594	/	995	1594		
#hohstock	132	181	/	132	181		
#unterbächhorn	3	4	/	3	4		
#gredetschtal	40	54	/	40	54		
#togenhorn	48	123	/	48	123		
#alpnessel	1	1	/	1	1		
#massariver	22	26	20	2	6		
#massagorge	13	14	/	13	14		
#brigerbärg	58	103	/	58	103		
#gredetschtal	40	54	/	40	54		
<b>Goms</b>				<b>12060</b>	<b>14967</b>	<b>0</b>	<b>0</b>
#obergoms	3239	4465	/	3239	4465		
#ishorn	122	162	/	122	162		
#bellwald	8985	10704	4	8626	10276		
#artbellwald	73	64	/	73	64		
<b>Fafleralp</b>				<b>3190</b>	<b>4222</b>	<b>123</b>	<b>136</b>
#fafleralp	1195	1678	/	1195	1678		

#anglegtscher	172	275	/	172	275		
#grundsee	219	333	7	204	310		
#hotelfalleralp	8	26	/	8	26		
#ötschentalermuseum	6	9	/	6	9		
#kühmad	18	24	/	18	24		
#eisten	756	975	80	151	195		
#blattenlötschen	26	59	/	26	59		
#kippel		1001	23	641	771		
#ferden	832	1094	20	769	875		
<b>Raron-Niedergesteln</b>							
#aron	2017	2949	25	<b>2737</b>	<b>4130</b>	<b>14</b>	<b>15</b>
#niedergesteln	316	433	3	1513	2211		
#heidnischbiel	3	9	/	3	420		
#gestelnburg	4	6	/	4	6		
#niwärch	10	20	/	10	20		
#hohtenn	123	238	/	123	238		
#luogelkinviadukt	32	42	/	32	42		
#bietschtalviadukt	5	5	/	5	5		
#ausserberg	525	829	/	525	829		
#eggerberg	214	350	/	2143	350		
<b>Total: 148 Hashtags</b>				<b>1208616</b>	<b>1559383</b>	<b>20662</b>	<b>23288</b>

Analyzed municipalities and localities	Airbnb			
	Total number of lodging rentals 2020 (A)	Number of lod. rentals w/o reviews (B)	Total number of reviews (C)	Number of reviews per lodging (A-C%)
<b>Canton of Bern</b>				
Kandersteg	51	10	1210	29.5
Reichenbach im Kandertal	20	3	682	40.1
Spiez	54	8	2757	59.9
Unterseen	17	2	1476	98.4
Interlaken	319	35	15971	56.2
Matten bei Interlaken	49	3	3807	82.8

Widerswil	49	7	2423	57.7
Lauterbrunnen (+Mürren, Wengen)	392	52	15171	44.6
Gündischwand	5	2	262	87.3
Grindelwald	275	34	8809	36.6
Meiringen	99	71	708	25.3
Schattenhalb	4	1	122	40.7
Innertkirchen	23	12	188	17.1
Guttannen	3	0	34	11.3
<b>Canton of Valais</b>				
Obergoms	21	3	565	31.4
Goms	45	7	1037	27.3
Bellwald	52	17	392	11.2
Fieschertal	13	3	104	10.4
Fiesch	31	5	263	10.1
Ernen	19	6	298	22.9
Bin	4	1	35	11.7
Lax	6	0	64	10.7
Betten	1	0	2	2.0
Bettmeralp	61	20	395	9.6
Grenjols	10	2	88	11.0
Bister	1	1	0	0.0
Mörel-Fliet	21	1	303	15.2
Riederalp	115	54	794	13.0
Bitsch	4	0	143	35.8
Naters	18	4	347	24.8
Birgisch (+Mund)	5	1	71	17.8
Belalp	5	3	7	3.5
Blatten bei Naters	67	44	176	7.7
Brig (+Ried-Brig)	16	6	434	43.4
Eggerberg	1	1	0	0.0
Baltschieder	3	0	25	8.3
Visp	9	3	178	29.7
Zeneggen	15	0	1685	112.3
Visperterminen	9	2	88	12.6
Ausserberg	2	1	3	3.0
Raron	0	0	0	0.0
Niedergesteln	0	0	0	0.0
Steg-Hohtenn	2	0	60	30.0

Ferden	3	0	187	62.3
Kippel	13	3	81	8.1
Wiler (Lötscher)	24	5	113	5.9
Blatten	11	4	108	15.4
Eischoll	12	3	382	42.4
Unterbäch	12	3	113	12.6
Bürchen	38	19	183	9.6
Leuk (Turtman-Untereims, Oberems, Ergisch, Agarn, Leuk, Gampel-Bratsch, Salgesch, Varen, Inden, Albinen, Leukerbad, Guttet- Fesche)	308	97	3694	17.5
<b>Total</b>	<b>2337</b>	<b>562</b>	<b>66038</b>	

## Appendix 2: List of analyzed areas and tourist spots within the RhB UNESCO WHS.

Analyzed areas/spots with the hashtags	Instagram			TripAdvisor		Airbnb			
	Total number of posts within the hashtags January 2020 (A)	% of the Multiple-Meaning posts within the sample (C)	Total number of area/spot-related posts - w/o MM Jan 2020 (A-C%)	Total number of reviews: <i>Hotspots</i> Jan 2020	Total number of reviews: <i>Overall facilities</i> Jan 2020	Total number of lodging rentals	Number of lodgings w/o reviews	Total number of reviews	Reviews per lodging
<b>Thuisis</b>			<b>79</b>	<b>0</b>	<b>418</b>	<b>5</b>	<b>1</b>	<b>261</b>	<b>65</b>
#bahnhofthuisis	7	-	7						
#hintertheinbrücke	19	1	18						
#burgehrenfels	414	87	54						
<b>Sils im Domleschg</b>			<b>523</b>	<b>0</b>	<b>16</b>	<b>0</b>			
#silsimdomleschg	430	-	430						
#alterschin	4	-	4						
#schinschlucht	24	-	24						
#lochobelviadukt	1	-	1						
#solstunnel	1	-	1						
#solisviaduct	63	-	63						
<b>Mutten</b>			<b>707</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>261</b>	<b>65</b>
#mutten	980	42	568						
#muldain	139	-	139						
<b>Alvaschein</b>			<b>195</b>		<b>20</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>1</b>
#alvaschein	184	-	184	<b>14</b>					
#stpetermistail	11	-	11	<b>14</b>					
<b>Tiefencastel</b>			<b>3126</b>	<b>0</b>	<b>170</b>	<b>1</b>		<b>15</b>	<b>15</b>
#tiefencastel	592	-	592						
#bahnhoftiefencastel	1	-	1						
#parcela	84445	97	2533						
<b>Surava</b>			<b>555</b>	<b>0</b>	<b>39</b>	<b>4</b>		<b>26</b>	<b>7</b>
#surava	561	1	555						
<b>Alvaneu</b>			<b>828</b>	<b>30</b>	<b>105</b>	<b>10</b>	<b>1</b>	<b>240</b>	<b>27</b>
#alvaneu	782	1	774						
#alvaneubad	54	-	54	<b>30</b>					

<b>Filsur</b>									
#filsur	6187		-	<b>12430</b>					<b>5</b>
#andwasser	2391		51	1172					
#andwasserviadukt	5022		-	5022	103				
#andwassertunnel	11		-	11					
#filsurerviadukt	22		-	22					
#schnittertobelviadukt	9		-	9					
#zalaitunnel	2		-	2					
#bahnhoffilsur	5		-	5					
<b>Stuls</b>				<b>31</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>-</b>
#stuls	984		97	30					
#bergünersteintunnel	1		-	1					
<b>Bergün</b>				<b>11230</b>	<b>88</b>	<b>856</b>	<b>16</b>	<b>6</b>	<b>12</b>
#bergün	11097		-	11097					
#glatsscherastunnel	1		-	1					
#bahnmuseumalbula	65		-	65	88				
#clixviadukt	1		-	1					
#bahnerlebnisweg	50		-	50					
#albulaviadukt	10		-	10					
#ruginux	6		-	6					
<b>Preda</b>				<b>12824</b>	<b>54</b>	<b>41</b>	<b>1</b>		<b>3</b>
#preda	17497		77	4024					
#albulapass	7038		-	7038	44				
#albulatunnel	148		-	148					
#palpuognasee	1609		-	1609	10				
#alpweissenstein	5		-	5					
<b>Bever</b>				<b>3316</b>	<b>0</b>	<b>510</b>	<b>7</b>	<b>3</b>	<b>7</b>
#bever	23587		93	1651					
#spinas	1677		70	503					
#laetscrapaly	1		-	1					
#fuorclacrapaly	68		-	68					
#valbever	1063		-	1063					
#märlweg	31		2	29					
#beverhbrücke	1		-	1					
<b>Samedan</b>				<b>13982</b>	<b>0</b>	<b>2807</b>	<b>52</b>	<b>10</b>	<b>14</b>
#samedan	13945		1	13806					
#oberengadinerseen	176		-	176					



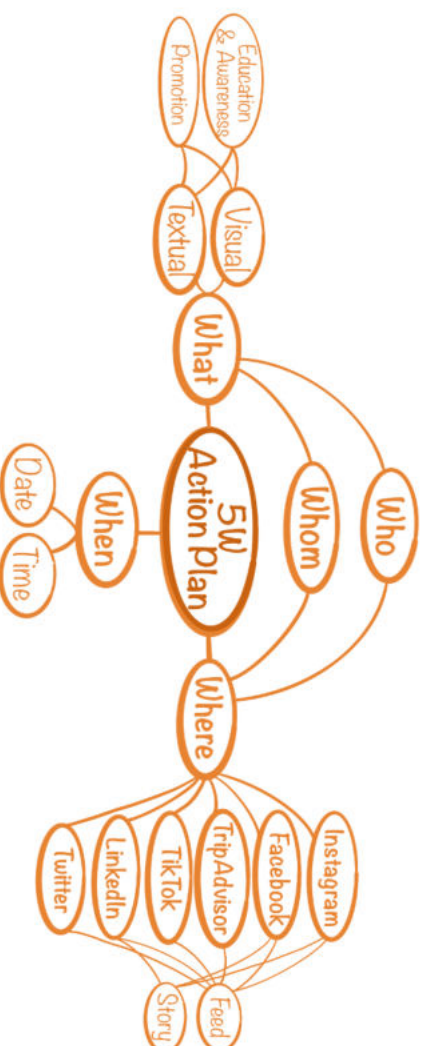


#cavaglia	2017	50	1009						
#gletschermühlen	675	26	450						
#leprese	1020	-	1020						
#sassalbo	594	98	12	1					
#poschiavolake	837	-	837	143					
Brusio			2072	8	109	3	0	112	37
#brusio	2308	31	1593						
#brusioviaduct	371	-	371	8					
#campascio	39	-	39						
#campocologno	71	2	69						
Tirano			39180	870	14850	63	10	1518	29
#tirano	45960	16	38606						
#madonnaditirano	590	3	572	870					
#tiranorailwaystation	2	-	2						
Total: 93 Hashtags			668847	4215	63354	688	164	7407	

## Appendix 3: List of the recommendations incorporated into the in-depth discussions.

### Online recommendations

- To use the 5W Social Media Action Plan



- To use storytelling as part of tourism interpretation and to involve locals,
- To use hashtags related to World Heritage and heritage tourism – e.g. #WorldHeritage, #UNESCOWorldHeritage, #HeritageTourism,
- To use a GIS-based mobile application presenting real-time data, highlighting overloaded spots, and offering alternatives to travelers.

### Offline recommendations

- To use already existing or locally-produced multifunctional signs with a call-to-action,
- To install objects - e.g. frames, art installations – in less visited spots,
- To organize educational seminars and/or workshops with partners in the area (e.g. hotels, lodging rentals, restaurants, tour operators) about the importance and efficient use of social media.