Chapter 25
A Systematic Literature Review on Social Media Analytics and Smart Tourism

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Abstract In recent years, the number of papers on how tourist use social media is increasing and is still being discussed. The main aim of this study is analyze the state of art by identifying the most important issues related to Social Media Analytics and Smart Tourism (SMAST) and offer some guidelines for future research through a Systematic Literature Review (SLR). The methodology used is based on collect, synthetize and analyze works published between 2014 and April 2018. This work is based on 45 papers obtained from three electronic databases, the result of this paper obtained twenty issues based on SMAST classified in four categories: (i) methodology of research, (ii) type of analysis, (iii) tourism current issues and (iv) social media type or platform. Furthermore, the top three of most popular issues obtained consist in: (1) works based in literature review, theoretical approach or explorative analysis; (2) Travel information, search or electronic word of mouth (eWOM), user-generated content (UGC) and (3) Social media activity analytics. The conclusion of this work emphasizes that the use of data generated by users in social networks and Smart Tourism are topics of great interest for researchers in tourism; challenges, opportunities and emerging approaches in SMAST are also presented.

Keywords Social media analytics · Smart tourism · Systematic literature review · Theoretical analysis · Explorative analysis · Travel information · eWOM · Social media activity analytics · UGC

JEL Classification Z OtherSpecialTopics

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1 Introduction

Nowadays, there is a lot of interest from researchers in Data Analytics due to the large amount of unstructured information generated. However, one of the most interesting areas is the use of social media, where there are 3196 millions of users, 13% higher than in 2017 (We are social 2008–2018.), and according to the same report will keep growing. Due to many people use social media to communicate, find relevant information or any recommendation, a very important area of research has emerged i.e. social media analytics where consists of: (i) capture a lot of conversations that occur naturally in social media, (ii) transform it into useful data, (iii) find ways to talk sociologically about them (Brooker et al. 2017) and exploit that information. The benefits of obtain useful information has been taken advantage in areas such as management, economy, politics, tourism, etc.; where some researcher have reached a consensus that social networks affects consumer choice and increase profits (Aral et al. 2013; Piccialli and Jung 2017). This work is focused on analyzing the most important studies about social media analytics and smart tourism in such way that current issues, opportunities and challenges can be found. According to a report of United Nations World Tourism Organization UNWTO, in the European Union in 2017, 538 millions of tourists have arrived, 8% more than 2016 (UNWTO 2018). However, there aren't related works that makes a systematic literature review (SLR) that allows show the advantages, disadvantages, challenges and opportunities for researchers and professionals in the field of Social Media Analytics and Smart Tourism (SMAST). Therefore, there is a need to synthesize the research until now regarding the current issues related to SMAST.

The fundamental pillars of social media analytics are: social media, users or people and industry and technology that transforms conversations, comments, photos, videos, likes, blogs, tweets, etc., into data with a lot of value for analysts and marketing specialists whose aim is analyze and monitor user behavior, brand loyalty and other performance indicators, making these data effective (Misirlis and Vlachopoulou 2018). In this work, many issues discussed in the analyzed publications are identified to define future research in SMAST.

This study presents a complete analysis to understand and describe social media analytics focused on smart tourism through the review of relevant literature. The main aim of this paper is an extensive review of publications related to SMAST, creating a systematic map of publications found; for that it is essential to create a conceptual classification scheme (S3M) for the literature found, using four dimensions or categories, such us: research methodologies, type of analysis, current issues about tourism and type of social media platform (Misirlis and Vlachopoulou 2018), providing an overview of current research issues in SMAST. Additionally, this work benefits to researchers, people involved in tourism and governments where tourism is an essential part of their economies.

Thus, the following research questions are formulated for this systematic literature review:

RQ1:   what are the current issues related to SMAST?
RQ2:   what are the top ranking for future research topic in SMAST?

The structure of the paper is divided into five sections that are: the introduction, theoretical background, research methodology, the SLR result findings and conclusions, future research directions and limitations.

2   Theoretical Background

Smart Tourism
The term "smart" has become a buzzword to describe technological, economic and social developments using sensors-dependent technologies and large amount of data and information exchange (Gretzel et al. 2015). First of all, is necessary to have a clear idea about what is "Smart Tourism", this term is derived from the concept of "Smart City" whose objective is improve the quality of life of all citizens. The term "Smart Tourism" refers to the activity where tourist apply new technologies in sectors related to touristic experience services, applications for reservations, accommodation, transportation and restaurants; in addition, it is related as a social phenomenon where the existing hospitality industry and tourism industry are integrated with the use of information and communication technologies (ICT) (Hunter et al. 2015; Lee 2017). Thus, it is clear that the tourist activity is unquestionably linked to ICT.

Social Media Analytics
The term of Social Media Analytics SMA refers to "an emerging field of interdisciplinary research that aims to combine, extend and adapt methods for the analysis of social networks" (Stieglitz et al. 2014). Another definition considers it as a set of tools for "collect, analyze, summarize and visualize social network data, generally driven by specific requirements of a target application". (Zeng et al. 2010).

Applications and services related to tourism have been influenced by social networks that every year increase the number of users and its impact has been exploited by marketing companies in general. Social media analytics focused on tourism is based on the use of information and communication technology to collect, clean, process, analyze and visualize those data to transform it into useful information in order to improve both tourist services and tourist' experience.

Thus, it is possible to define Social Media Analytics and Smart Tourism as an interdisciplinary set of methods and techniques that allows collect data from social media (i.e. blogs, review sites, media sharing, question-and-answer sites, social bookmarking, social networking, social news and wikis) using technological services provided by Smart Cities to process, analyze and visualize useful information in order to improve services and tourists applications.

3   Research Methodology

This work uses the methodological process based on Systematic Literature Review mentioned in Okoli and Schabram (2010) and conceptual classification scheme named S3M by using four distinct dimensions/categories/criteria of classification and in each category issues are defined. This hybrid methodology allows to make a systematic literature review using a classification to have a general vision of issues, platforms, types of analysis and methodologies in each paper. Articles that use S3M can be found in five types of journals: Marketing and e-Marketing, e-business and management, behavioral sciences, information systems and social media, Misirlis and Vlachopoulou (2018), thus, S3M can be used in this work. Okoli and Schabram (2010) makes a SLR where the research questions are first determined, then the search, selection, classification and analysis is carried out.

In this manner the research questions (RQs) which were mentioned in the introduction are mentioned below:

RQ1:   what are the current issues related to SMAST?
RQ2:   what are the top ranking for future research topic in SMAST?

Subsequently, the search' information is performed. Thus, the search terms are chosen to answer the research questions and it's are combined with the use of Boolean operators (AND, OR). Terms used are: ("social media" analytics OR analysis AND "smart tourism"). This process was done on the three academic databases, such as: Scopus, Science Direct and IEEE. Articles belonging a books, book chapters, articles in press and review are excluded from the research. In total, 398 papers between 2014 to April 2018 were found. The year with the largest number of papers was published was 2017 with 135 articles and until April 2018, the number amounts to 47. According to the domain for this work, 45 of them were selected, those that are repeated among the selected databases were discarded. Thus, each study was revised in such way that the appropriate classification for SMAST can be established.

The methodology used in this work can be synthesized as shown in the Fig. 1.

The papers, which paper' title matches with the research questions are named as "found", the papers which abstract of them match with the research questions are named as "candidate" and the papers which results of them match with the research questions are named as "selected". Results are demonstrated in Table 1.

4   SLR and Findings

The 45 papers that have been selected after the analysis of title, abstract and results are used to answer the research question 1 (RQ1) (Table 2, sorted by id). Additional information as publisher, year, authors and source are presented.

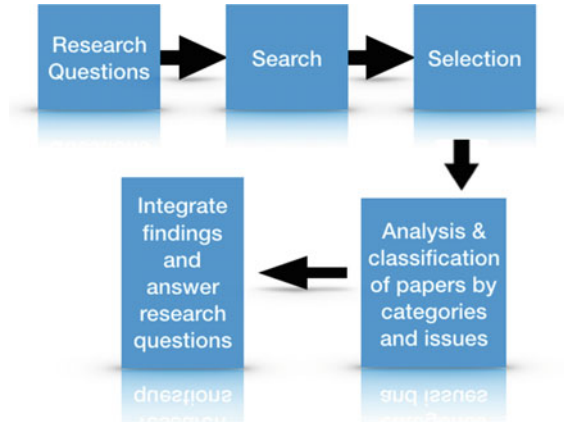**Fig. 1** Steps for selecting papers *Source* Own elaboration

Table 1. Classification and selection of papers per database

Source	Found	Candidates	Selected
Scopus	86	35	19
ScienceDirect	311	40	22
IEEE	19	10	4
Total	398	76	45

The 45 selected papers are distributed as follows: 4 published in 2014, with 8.8%, 7 published in 2015 with 15.5%, 15 published in 2016 with 33.3%, 17 published in 2017 with 37.7% and 2 published until April 2018 with 4.4%. Thus, the interest in SMAST is growing each year, being 2016 and 2017 the years with the largest number of studies were published.

Further, we proceed to classify according to four different dimensions. As mentioned initially, each article is subdivided according to: (i) the methodology of research, (ii) type of analysis, (iii) current issues in tourism and (iv) type of social media platform. The search, selection and classification of each work allows to summarize each publication, have a clear vision on topics on which each work is focused and find the current issues that generate more interest.

The term typology is used instead of taxonomy, the classification used in Misirlis and Vlachopoulou (2018) where this classification is adapted to this study. The categories of marketing and fields of study are discarded and a category based on tourism is added. Based on the analysis of works published and selected for this study, different subcategories specifically related to the tourism domain were identified where future studies and researchers can add, modify or eliminate issues or categories. Each work is related to the Smart Tourism, however; in the typology of "Tourism current issues" is added.

Based on the 45 papers analyzed, 6 current issues have been found in the field of tourism, which allows to answer the first research question RQ1: What are the

Table 2. List selected studies table

No.	Id	Title	Publisher	Year	Author	Source
1	P001	Adoption of travel information in user-generated content on social media: the moderating effect of social presence	Behaviour and Information Technology	Chung et al. ((2015)	Chung, Heejeong Han and Chulmo Koo	Scopus
2	P002	SoCoMo marketing for travel and tourism: Empowering co-creation of value	Journal of Destination Marketing and Management	Buhalis and Foerste (2015)	Dimitrios Buhalis, Marie Foerste	Scopus
3	P003	The role of prior experience in the perception of a tourism destination in user-generated content	Journal of Destination Marketing and Management	Marchiori and Cantoni (2015)	Elena Marchiori, Lorenzo Cantoni	Scopus
4	P004	The use of social media in travel information search	Telematics and Informatics	Chung and Koo (2015)	Namho Chung, Chulmo Koo	Scopus
5	P005	Tourism analytics with massive user-generated content: A case study of Barcelona	Journal of Destination Marketing and Management	Marine-Roig and Anton Clavé (2015)	Estela Marine-Roig, Salvador Anton Clavé	Scopus
6	P006	Identifying and ranking cultural heritage resources on geotagged social media for smart cultural tourism services	Personal and Ubiquitous Computing	Nguyen et al. (2017)	Tuong Tri Nguyen, David Camacho, Jai E. Jung	Scopus
7	P007	Social smart destination: a platform to analyze user generated content in smart tourism destinations	Advances in Intelligent Systems and Computing	Cacho et al. (2016)	Cacho, A., Figueredo, M., Cassio, A., (…), Cacho, N., Prolo, C.	Scopus
8	P008	A method for web content extraction and analysis in the tourism domain	ICEIS 2017 - Proceedings of the 19th International Conference on Enterprise Information Systems	Oro and Ruffolo (2017)	Oro, E., Ruffolo, M.	Scopus
9	P009	A novel popular tourist attraction discovering approach based on geo-tagged Social media big data	ISPRS International Journal of Geo-Information	Peng and Huang (2017)	Peng, X., Huang, Z.	Scopus
10	P010	Creating value from social big data: Implications for smart tourism destinations	Information Processing and Management	Del Vecchio (2017)	Pasquale Del Vecchio, Gioconda Mele, Valentina Ndou, Giustina Secundo	Scopus

Table 2. (continued)

No.	Id	Title	Publisher	Year	Author	Source
11	P011	Generating travel-related contents through mobile social tourism: Does privacy paradox persist?	Telematics and Informatics	Hew et al. (2017)	Jun-Jie Hew, Garry Wei-Han Tan a, Binshan Lin, Keng-Boon Ooi	Scopus
12	P012	How can big data support smart scenic area management? An analysis of travel blogs on Huashan	Sustainability	Shao et al. (2017)	Jun Shao, Xuesong Chang and Alastair M. Morrison	Scopus
13	P013	Smart tourism technologies in travel planning: The role of exploration and exploitation	Information and Management	Huang et al. (2017)	C. Derrick Huanga, Jahyun Goo, Kichan Nam, Chul Woo Yoo	Scopus
14	P014	Social media analytics and value creation in urban smart tourism ecosystems	Information and Management	Neumann et al. (2017)	Tobias Brandt, Johannes Bendler, Dirk Neumann	Scopus
15	P015	Social support and commitment within social networking site in tourism experience	Sustainability	Chung et al. (2017)	Namho Chung, Inessa Tyan and Hee Chung Chung	Scopus
16	P016	The relationship among tourists' persuasion, attachment and behavioral changes in social media	Technological Forecasting and Social Change	Chung and Han (2017)	Namho Chung, Heejeong Han	Scopus
17	P017	Using geotagged resources on social media for cultural tourism: A case study on cultural heritage tourism	Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, LNICST	Nguyen et al. (2017)	Tuong Tri Nguyen, Dosam Hwang, and Jason J. Jung	Scopus
18	P018	Digital technology in a smart tourist destination: The case of Porto	Journal of Urbantechnology	Manuel et al. (2018)	Pedro Manuel da Costa Liberato, Elisa Alén-González & Dália Filipa Veloso de Azevedo Liberato	Scopus
19	P019	Do online information sources really make tourists visit more diverse places?: Based on the social networking analysis	Information Processing and Management	Lee et al. (2018)	Hyunae Lee, Namho Chung, Yoonjae Nam	Scopus
20	P020	Development of social media strategies in tourism destination	Procedia - Social and Behavioral Sciences	Pavlí (2015)	Alžbeta Kiráľová Antonín Pavlíčeka	Science Direct
21	P021	Heritage tourism entrepreneurship and social media: Opportunities and challenges	Procedia - Social and Behavioral Sciences	Surugiu (2015)	Marius-Razvan Surugiua, Camelia Surugiu	Science Direct

(continued)

Table 2. (continued)

No.	Id	Title	Year	Author	Publisher	Source
22	P022	How smart is your tourist attraction?: Measuring tourist preferences of smart tourism attractions via a FCEM-AHP and IPA approach	Wang et al. (2016)	Xia Wang, Xiang (Robert) Li, Feng Zhen, JinHe Zhang	Tourism Management	Science Direct
23	P023	A big data analytics method for tourist behaviour analysis	Jahan et al. (2017)	Shah Jahan Miaha, HuyQuan Vu, John Gammack, Michael McGrath	Information and Management	Science Direct
24	P024	Content mining framework in social media: A FIFA world cup 2014 case analysis	Thomaz et al. (2017)	Guilherme M. Thomaz, Alexandre A. Biz, Eduardo M. Bettoni, Luiz Mendes-Filho, Dimitrios Buhalis	Information and Management	Science Direct
25	P025	Exploring the capacity of social media data for modelling travel behaviour: Opportunities and challenges	Rashidi et al. (2017)	Taha H. Rashidi, Alireza Abbasi, Mojtaba Maghrebi, Samiul Hasan, Travis S. Waller	Transportation Research Part C	Science Direct
26	P026	Mapping Cilento: Using geotagged social media data to characterize tourist flows in southern Italy	Chua et al. (2016)	Alvin Chua, Loris Servillo, Ernesto Marcheggiani, Andrew Vande Moere	Tourism Management	Science Direct
27	P027	Measuring tourism destinations using mobile tracking data	Raun et al. (2016)	Janika Raun, Rein Ahas, Margus Tiru	Tourism Management	Science Direct
28	P028	Opinion mining from online hotel reviews—A text summarization approach	Hu et al. (2017)	Ya-Han Hu, Yen-Liang Chen, Hui-Ling Chou	Information Processing and Management	Science Direct
29	P029	Predicting hotel review helpfulness: The impact of review visibility, and interaction between hotel stars and review ratings	Hu and Chen (2016)	Ya-Han Hu, Kuanchin Chen	International Journal of Information Management	Science Direct
30	P030	Shared experience in pretrip and experience sharing in posttrip: A survey of Airbnb users	Joo et al. (2017)	Sung Joo Bae, Hyeonsuh Lee, Eung-Kyo Suh, Kil-Soo Suh	Information and Management	Science Direct
31	P031	Effects of tourism information quality in social media on destination image formation: The case of Sina Weibo	Kim et al. (2017)	Sung-Eun Kim, Kyung Young Lee, Soo Il Shin, Sung-Byung Yang	Information & Management	Science Direct

Table 2. (continued)

No.	Id	Title	Year	Publisher	Author	Source
32	P032	Effects of user-provided photos on hotel review helpfulness: An analytical approach with deep leaning	Ma et al. (2018)	International Journal of Hospitality Management	Yufeng Ma, Zheng Xiang, Qianzhou Du, Weiguo Fan	Science Direct
33	P033	Obtaining a better understanding about travel-related purchase intentions among senior users of mobile social network sites	Ja et al. (2017)	International Journal of Information Management	Myung Ja Kim, Choong-Ki Lee, Mark Bonn	Science Direct
34	P034	Social media analytics: Extracting and visualizing Hilton hotel ratings and reviews from TripAdvisor	Chang et al. (2017)	International Journal of Information Management	Yung-Chun Chang, Chih-Hao Ku, Chun-Hung Chen	Science Direct
35	P035	Social return and intent to travel	Boley et al. (2018)	Tourism Management	B. Bynum Boley, Evan J. Jordan, Carol Kline, Whitney Knollenberg	Science Direct
36	P036	What makes tourists feel negatively about tourism destinations? Application of hybrid text mining methodology to smart destination management	Kim et al. (2017)	Technological Forecasting and Social Change	Kun Kim, Oun-joung Park, Seunghyun Yun, Haejung Yun	Science Direct
37	P037	Will firm's marketing efforts on owned social media payoff? A Quasiexperimental analysis of tourism products	Chang et al. (2017)	Decision Support Systems	Hsin-Lu Chang, Yen-Chun Chou, Dai-Yu Wu, Sou-Chein Wu	Science Direct
38	P038	The effects of social media on emotions, brand relationship quality, and word of mouth: An empirical study of music festival attendees	Hudson et al. (2015)	Tourism Management	Simon Hudson, Martin S. Roth, Thomas J. Madden, Rupert Hudson	Science Direct
39	P039	The use of social media in travel information search	Chung and Koo (2015)	Telematics and Informatics	Namho Chung, Chulmo Koo	Science Direct
40	P040	Using social network analysis to explain communication characteristics of travel-related electronic word-of-mouth on social networking sites	Luo and Zhong (2015)	Tourism Management	Qiuju Luo, Dixi Zhong	Science Direct

Table 2. (continued)

No.	Id	Title	Publisher	Year	Author	Source
41	P041	Likes—The key to my happiness: The moderating effect of social influence on travel experience	Information and Management	Sedera et al. (2017)	Darshana Sedera, Sachithra Lokuge, Maura Atapattu, Ulrike Gretzel	Science Direct
42	P042	Big data in tourism industry	Iternational Conference on e-Commerce with focus on e-Tourism	Shafiee and Ghatari (2016)	Sanaz Shafiee, Ali Rajabzadeh Ghatari	IEEE
43	P043	Mapping smart tourism research in China: A semantic and social network analysis using CiteSpace	Service Systems and Service Management (ICSSSM)	Zhang et al. (2016)	Qiu Zhang, Qiang Wang, Jin-Xing Hao	IEEE
44	P044	Landmark reranking for smart travel guide systems by combining and analyzing diverse media	IEEE Transactions on Systems, Man, and Cybernetics: Systems	Shen et al. (2016)	Junge Shen, Jialie Shen, Tao Mei, and Xinbo Gao	IEEE
45	P045	Social-aware visualized exploration of tourist behaviours	Big Data and Smart Computing (BigComp)	Li et al. (2016)	Mingzhao Li, Zhifeng Bao, Liangjun Song and Henry Duh	IEEE

Table 3. S3M typology for social media analytics and Smart Tourism

Methodology of research	Literature review and/or Theoretical approach/Explorative analysis	I01
	Surveys (Questionnaire based research/Non questionnaire based research	I02
Type of analysis	Predictive analysis	I03
	Natural Language process (NLP)—Text analysis	I04
	Effectuation analysis	I05
	Statistical analysis	I06
	Sentiment analysis	I07
	Social media activity analysis	I08
	Structural equation modelling (SEM) Techniques	I09
Current issues in tourism	Destination and attractions	I10
	Decision making/marketing	I11
	Travel/Tourism satisfaction	I12
	Mobility behavior/tourism movements	I13
	Travel information/Search/Electronic word of mouth eWOM	I14
	Privacy Concern	I15
Social media type/ platform	Social networking sites (Facebook, LinledIn, Instagram, MySpace, Sina Weibo, Criteo)	I16
	Blogs/Microblogs (Blogspot, diggwordpress, Twitter, Tumblr, twitxr, tweetpeek, plurk, TravelBlogs, Mafengwo, Baidu Tourism, and Ctrip)	I17
	Content communities—Video sharing sites (Youtube, Flickr, slideshare)	I18
	Forums—discussion (Phpbb, phorum, skype, messenger, google talk)	I19
	Online travel reviews (TripAdvisor, Yelp, Airbnb, www. virtualtourist.com)	I20

current issues related to SMAST?; such as: (i) destination and attraction, (ii) decision making/marketing, (iii) travel satisfaction/tourism satisfaction, (iv) Mobility behavior/tourism movements, (v) travel information/search information/Electronic word of mouth (eWOM)/user-generated content (UGC). This current issues are related with the work of Shafiee and Ghatari (2016); they mention topics such as: service quality, reputation and destination image, UGC as eWOM, experiences, behaviors and movements patterns (Table 3).

Each study analyzed can be based on one or several issues in different categories or dimensions. Nevertheless, each work uses a methodology of research, one or many types of analysis and if required, the data of a social media platform for analysis. On the other hand, some papers uses surveys as source of information to perform analysis (e.g. to find the level of travel satisfaction some researchers use surveys to get the perceptions of users before, during and after about their travel and their relation with the use of social media). The paper relationship with the categories and issues can be seen in Table 4.

Table 4. Matrix by paper, categories and issues

Paper ID	Category																			
	M. of R.		Type of analysis						Current issues in tourism						Social media type/platform					
	I01	I02	I03	I04	I05	I06	I07	I08	I09	I10	I11	I12	I13	I14	I15	I16	I17	I18	I19	I20
P001	✓	✓							✓					✓						
P002	✓									✓				✓						
P003		✓								✓				✓						
P004		✓							✓					✓						
P005	✓							✓									✓			
P006	✓							✓		✓						✓		✓		
P007	✓							✓		✓							✓			
P008	✓			✓			✓							✓		✓				
P009	✓			✓				✓		✓	✓							✓		
P010	✓						✓			✓	✓					✓				
P011		✓						✓	✓				✓	✓						
P012	✓						✓		✓			✓					✓			
P013		✓							✓		✓	✓	✓							
P014	✓			✓				✓				✓		✓			✓			
P015	✓								✓					✓	✓					
P016		✓				✓			✓					✓						
P017	✓							✓						✓		✓		✓		
P018		✓				✓				✓		✓		✓						
P019	✓							✓												
P020	✓							✓		✓										
P021	✓									✓										
P022	✓								✓	✓										

(continued)

Table 4. (continued)

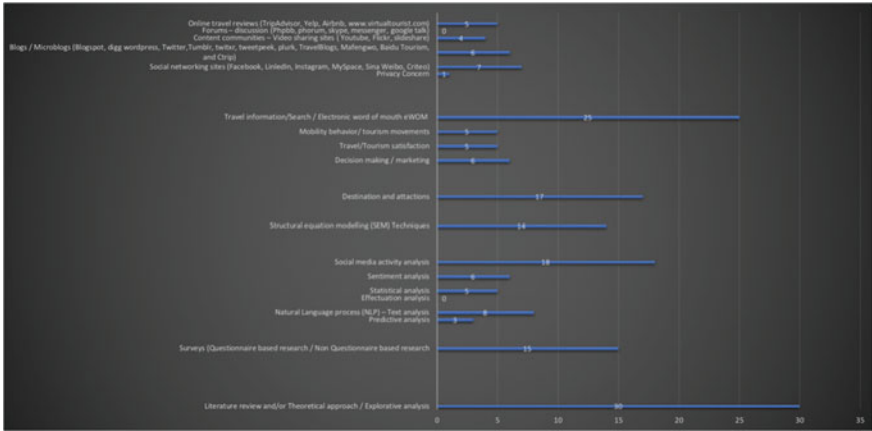| Paper ID	Category																			
	M. of R.		Type of analysis					Current issues in tourism							Social media type/platform					
	I01	I02	I03	I04	I05	I06	I07	I08	I09	I10	I11	I12	I13	I14	I15	I16	I17	I18	I19	I20
P023	✓		✓	✓																
P024	✓			✓						✓	✓							✓		
P025		✓				✓								✓			✓			
P026	✓												✓							
P027	✓									✓			✓				✓			
P028	✓			✓			✓													✓
P029	✓		✓											✓						✓
P030		✓				✓			✓					✓						
P031		✓						✓	✓	✓				✓						
P032	✓		✓											✓		✓				✓
P033		✓							✓		✓									
P034	✓			✓			✓							✓						✓
P035		✓							✓	✓										
P036	✓			✓			✓							✓						✓
P037						✓								✓		✓				
P038		✓						✓	✓					✓						
P039		✓						✓	✓					✓						
P040	✓							✓			✓			✓		✓				
P041		✓							✓			✓								
P042	✓									✓										
P043	✓							✓						✓						
P044	✓							✓						✓						
P045	✓							✓						✓						

Fig. 2 Current SMAST Issues. *Source* Own elaboration from Microsoft Excel

To answer RQ2: what are the top ranking for future research topic in SMAST?. According to the data collected from Table 2, the papers selected are analyzed according to the categories and issues. Table 3 is analyzed and grouped according to categories and issues, further. The number of papers for each issue that were discussed can be seen on the graph of Fig. 2.

5 Conclusions, Future Research Directions and Limitations

This study presents an overview of the current issues on which researchers at SMAST are based, through the systematic literature review about of published papers between 2014 and April 2018. After the search 389 papers were found, of them the candidate publications were 76 and of them, through a thorough review 45 were selected.

The 45 selected studies were categorized according to the recommendation of Misirlis and Vlachopoulou (2018), they use S3M; nevertheless, it was adapted to the present work where current issues in tourism were identified and for this six issues were identified: (i) destination and attraction, (ii) decision making/marketing, (iii) travel satisfaction/tourism satisfaction, (iv) Mobility behavior/tourism movements, (v) travel information/search information/Electronic word of mouth (eWOM)/user-generated content (UGC);are issues that researchers have put a lot of interest in the field of tourism or smart tourism; and, the rest of issues related with social media analytics. The results show the current issues about of SMAST that allows to answer the first research question. To answer the second research

question, after analyze the results obtained in Table 3, the current issues with the most numbers of works was: (1) Literature review/Theoretical approach/ Explorative analysis is in first place with 30 papers followed by (2) Travel information/Search information/Electronic word of mouth (eWOM), user-generated content (UGC) with 30 papers and (3) Social media activity analysis with 18 papers. It is clear that tourism researchers are based on testing from different areas and topics of sciences (e.g. mental accounting theories or prospect theory) in such way, that they can experiment with data generated from social media platforms. There is also, a lot of interest in the quality of the data generated from social media, because this influences other users to choose a destination for their holidays and can be used for marketing purposes and higher revenues for the tourism industry. Results presented in this work can help to researchers to better understand trends based on SMAST, and also, reveals the lack of interest in issues such as privacy of data in social media; this issue is a serious problem that could be addressed in future research. Another issue found that has not been addressed and has a great relevance in the sector is: Travel satisfaction; although, there are some research based on the use of surveys or questionnaires and their associated possible biases (e.g. social desirability biases, short-term recall biases, etc.) without taking into account data generated in social networks that can be processed with NLP techniques combined with machine and deep learning techniques, this generate new challenges and opportunities for future research. The present study is not without limitations; the search of information was made with terms such as: "social media analytics and smart tourism" and not separately (e.g. destinations, decision making, travel satisfaction, etc.) which would give a clearer idea of studies conducted in specific issues of tourism. This work may be used as a research reference for the next 3–5 years and can be used as a reference for future review studies in SMAST.

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