



Evaluating the Role of Destination Marketing Organization's Twitter Data in the Formation of Destination Image

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Abstract

More than half of the global population are using internet and simultaneously the popularity of social media is also growing two-fold. This offers Destination Management Organizations (DMO) to leverage the potential of social media technologies and strategies effectively to connect to the global audience and promote their destination. Many papers are there that focus on DMOs' social media pages, but in the context of the Indian DMO's role in Destination Image, is negligible, and efforts on papers that reflect the social media analysis for non-coders are almost missing. To evaluate the role of social media, we investigated particularly the X (Twitter) platform of DMOs in the creation of destination image, since it plays a vital role in creating awareness among tourists about the destination. This study evaluates the top five tourism-performing Indian state DMOs' role in building destination image. The twitter data of top five Indian top tourism performing states on the basis of the number of domestic tourist visits (in millions) in 2020 are studied. The states are 1) Tamil Nadu, 2) Uttar Pradesh 3) Karnataka 4) Andhra Pradesh and 5) Telangana. The study uses qualitative data analysis technique, wherein content analysis, machine learning, and text analysis techniques has been used and the twitter comments of three months, April-June and October - December during the period January 2019 to December 2021 of these states has

been studied. Further, this study performs text analysis and visual representations of frequent words and finds the primary attributes through which the DMOs promote their destinations.

Key Words: Tourism, Twitter, Destination Marketing Organizations, Destination Image, Text Mining

INTRODUCTION

The evolution of the internet and the subsequent development in information technology has provided a practical and simple platform for communication. In the era of technological advancement, where users can disseminate knowledge to a larger population with clicks, and every piece of information is available at the fingertip, digital transformation has become a prime requirement for every business. The same applies to the tourism industry. The tourism boards- international and national organisations, travel companies or cruise lines- have shifted their focus from traditional marketing to online platforms for marketing, promotion and communication (Curlin et al., 2019; Irfan et al., 2017). Social media has become an essential tool for communication (Williams et al., 2020) and sharing information (Taylor, 2020).

According to the United Nations International Telecommunication Union (ITU)- an agency for information and communication technologies (United Nations, n.d.), global internet users have increased by nearly 20% from 2019 to 2021. It estimates that almost 67% of the world population will be internet users in 2023 (International Telecommunication Union (ITU)., 2023). In 2019, worldwide internet users were 4.1 billion, which increased to 4.9 billion in 2021 and crossed the 5 billion mark in April 2022. China is leading the chart of active internet users with 1 billion, followed by India with 658 million (Review, 2022). The number of active social media users in January 2022 reached 4.55 billion (Hines, 2022). The market leader, the United States of America, tops the charts for Twitter users with 76 million, Japan is in second position with 60 million, and India is ranked third globally, with 23.6 million Twitter users (*Twitter Users by Country 2022*, n.d.). To tap this growing popularity of social media platforms (SMP), many marketers have started using digital marketing as an essential tool for branding and promotion (Ketter & Avraham, 2021). It is an easy and convenient form of communication and the preferred platform to stay connected to the outside world. The users of these SMPs were not only limited to individuals but also to business entities.

In the past few years, there has been increased usage of social media platforms by DMOs (Hays et al., 2013; Rodríguez et al., 2020). Similarly, social media for the tourism industry is an extensively researched area (de las Heras-Pedrosa et al., 2020). Social media also plays a crucial role in forming the destination image since the post content on the DMO's social media pages gives a holistic impression of their destinations (Gartner, 1994; Hahm & Tasci, 2020).

For the tourism industry, the popularity of Twitter has seen upward growth. It is a preferred microblogging platform among industry professionals and organisations (Curlin et al., 2019) and national destination management organisations (Philander & Zhong, 2016). Twitter is an easy-to-use SMP and an effective tool to connect with customers using short, concise messages. It is a popular platform for the tourism industry (Siregar et al., 2020).

The study, which was done on the Indian DMO's Facebook pages (Kumar et al., 2021) and adopted a mixed method study design, found that Facebook, Twitter, and YouTube were the preferred SMPs used by DMOs for destination promotion. The present study adopted a comparative analysis of a single platform -Twitter. The study aims to compare India's top five tourist destination states and provide insights into page performance. Specifically, this research has four objectives:

- To do a comparative analysis of the Twitter pages of India's top 5 tourism-performing states.
- To find out the most engaging Twitter account and the type of the most engaging content in these accounts.
- To find out the dominant attributes in the tweet text.

LITERATURE REVIEW

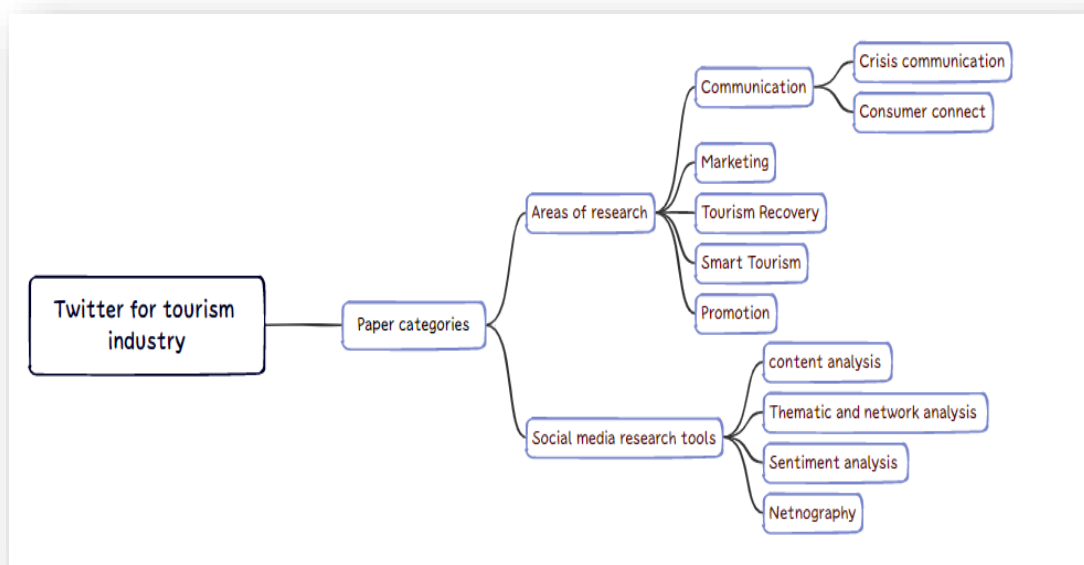
Over the years, the importance of Destination image (DI) has increased tremendously for the tourism sector. DI largely depends on an individual's perception of the destination and is formed by cognitive (beliefs and information), affective (sentiments), and conative (behaviour) attributes (Gartner, 1994; Rodríguez et al., 2020). The perceptions created primarily rely on the information available through various digital media, print media and other word-of-mouth sources (Khaki et al., 2023). In the digital era, social media usage has increased both from the consumers' and suppliers' perspectives.

Previous studies show that Twitter is a preferred platform among researchers and a popular worldwide web-based social media application among marketers and consumers (Clarke & Hassanien, 2020). The content analysis of the published papers indicates two categories- 2.1) Areas of research and 2.2) Social media research tools adopted by researchers in their study (Fig 1)

Areas of Research

Twitter usage for communication (crisis and consumer connect), marketing, promotion, user-generated content, tourism recovery, and smart tourism: Twitter is one of the preferred platforms among the researchers. The study on Commonwealth Games' communication found that SM directly affects destination marketing agencies (Jin & Cheng, 2020). The study on Spanish DMOs, which used an online survey of the practitioners, found that brand communication of the Spanish DMOs is fully standardised (Fernández-Cavia et al., 2017), and the use of online tools is tactfully handled (Hvass & Munar, 2012). Also, the study revealed that the DMOs are less inclined to use mobile-based social media applications. The exploratory research on airlines found a lack of marketing strategies in their social media communication (Hvass & Munar, 2012). In contrast, a study on user-generated content (Dedeoğlu et al., 2020) on the visitors of Alanya, Turkey, found its positive impact on destination branding.

Figure 1: Categorisation of the published papers



Social Media Research Tools.

The study on the COVID-19 effect on Malaysian tourism, which used RapidMiner software for thematic analysis of Twitter, found three themes: tourism destination, user sentiments, and future planning (N A Deraman et al., 2021). Further, the study concluded that Twitter users were optimistic about the pandemic ending soon and about the movement in domestic travel. The study on Australia's tourism destinations found that tourists' sentiments influence destination image (Bui et al., 2021). The review article on netnography (Tavakoli & Wijesinghe, 2019) found its limited usage in the tourism and hospitality industry. Another study on Twitter sentiment analysis of the tourists intending to visit Thailand and concluded that sentiments of the tweet conversation related to visiting Bangkok were positive even though the nation was in lockdown (Sontayasara et al., 2021). Table 1 summarises the various tools used by researchers in their study

Further, the study on Brazil's destination image found that social media marketing is a helpful tool to develop a positive image of a destination (Hahm & Tasci, 2020), whereas study on Taman Mini Indonesia Indah found that Twitter, along with other social media platforms, directly influences the destination image and can be used for promoting the destination (Arifiansyah et al., 2020). The study on Egypt through content analysis suggests that incorporating pictures/images in online content can improve the destination image of the country (Marzouk, 2021). The study on Barcelona, a Spanish city, suggested a need to analyse each social media platform (Garay Tamajón & Cànoves Valiente, 2017). Moreover, there is limited study in the Indian DMOs Twitter context. This analysis will fill the gap found in the previous research by providing insights into the various components involved in forming a destination image. For this study, the adopted definition (Echtner & Ritchie, 2003) states, "*Destination Image is not only the perceptions of individual destination attributes but also the holistic impression made by the destination.*"

Table 1: Tools Adopted for Social Media Research

Social media research tools	Citation
Content analysis	(Aydin, 2020; Hvass & Munar, 2012; Ketter & Avraham, 2021; Lin et al., 2021; Rodríguez et al., 2020)
Thematic and network analysis	(Curlin et al., 2019; Marine-Roig, 2021; Qian et al., 2018)
Sentiment analysis	(Bui et al., 2021; Micera & Crispino, 2017; Nadeau et al., 2022; Nave et al., 2018)
Netnography	(Jimura & Lee, 2020; Lund et al., 2020; Nusair et al., 2019; Tavakoli & Wijesinghe, 2019)

Table 2 shows previous studies done on destination images. Table 2 shows in the study on Peru's destination image (Stepchenkova & Zhan, 2012), the cognitive component is divided into three factors, and studies related to social media and destination image (Charlesworth, 2015, 2018; Stepianiuk, 2015) categorized the conative component of social media platforms in the form of AIDAT model an abbreviation for 'Attention, Interest, Desire, Action & Tell'.

Table 2: Destination Image Attributes

Author Name	Cognitive Components	Affective Components:
(Stepchenkova & Zhan, 2012)	Factor I: Quality of Experience Standard Hygiene and Cleanliness Quality of Infrastructure Personal Safety Good Nightlife and Entertainment Suitable Accommodations Appealing Local Food (Cuisine) Great Beaches/Water Sports Interesting and Friendly People Factor II: Attractions Interesting Cultural Attractions Interesting Historical Attractions Beautiful Scenery/Natural Attractions Factor III: Value/Environment Good Value for Money. Unpolluted/Unspoiled Environment Good Climate	Arousing±Sleepy, Pleasant±Unpleasant, Exciting± Gloomy, and Relaxing±Distressing
(Marine-Roig, 2021)	sun, sea, sand; nature and landscape;	

	Gaudi work; tangible heritage; intangible heritage; food and wine; urban environment; leisure and recreational activities; sports.	
(Rodríguez et al., 2020)	Friendly and receptive residents Good restaurants & gastronomy Good value for money Good shopping opportunities Interesting cultural events Good accommodation Interesting natural heritage Prices, accommodation, location (Budi et al., 2017; Bui et al., 2021; Marine-Roig, 2021; Molinillo et al., 2017)	Pleasant Stimulating Interesting
Conative (Behavioral)		
(Charlesworth, 2015, 2018; Stepaniuk, 2015) (A - ACTION - where the user is ready to act; and T - TELL - where the user should be encouraged to spread the message) activities of the users		

RESEARCH DESIGN AND METHODOLOGY:

For this study, the top five Indian tourism-performing states are selected based on the number of domestic tourist visits during 2020 (Min. Of Tourism, 2021). The states are 1) Tamil Nadu, 2) Uttar Pradesh, 3) Karnataka, 4) Andhra Pradesh, and 5) Telangana.

The Twitter data of DMOs is imported between April-June and October-December, from January 2019 to December 2021. The authors have the licensed version of node XL Pro Student, which helped to analyse the text. Initially, data extraction and cleaning are done; after that, descriptive statistical analysis is performed to understand the performance of the posts uploaded to the official page of the tourism boards. Next, semantic analysis of the top words, hashtags and word pairs is done, to explore the (Kim & Chakraborty, 2024) major words used by the DMOs. The top 10 words is studied to understand the communication pattern of the DMOs with their followers. These words are then categorized into three categories of destination image viz., Cognitive destination image, Affective destination image and Conative destination image. This will give an understanding of the frequently used areas of DMOs social media communication. Finally, the text is visual represented through word-cloud.

Theoretical Contributions

The paper's objective is to do a comparative analysis of the tweets of five Indian DMOs and evaluate the role of Twitter data in forming DI through social media analytical tools. In this context, free and paid data capturing and analysis tools is used. The software Orange Data Mining and NodeXL are user-friendly tools and do not require any prior coding knowledge to work on this. Azure Machine Learning is an add-on to Microsoft Office applications. This study contributes practically and theoretically to global researchers and industry practitioners to evaluate social media metrics and visualisation.

FINDINGS AND INTERPRETATION

Data Analysis

Table 3 depicts the five tourism states' Twitter followers (in Thousands) and domestic tourist arrivals (in millions). The data shows that the second-ranked tourist state, Uttar Pradesh tourism, has the maximum number of followers (521.8 K), whereas the first-ranked state, Tamil Nadu, is ranked third in terms of Twitter followers (77.8K). It will be interesting to look into the Twitter account of UP Tourism (@uptourismgov) to get insights on- page activities and performance.

Table 3: Summary of the retrieved tweets of DMO

Rank	DMO state	Number of domestic tourists-2020 (in millions)	Twitter Followers (in Thousands retrieved on 26/12/2023)	Total Downloaded Tweets	Tweets analysed*	Retweets	Favourites	Comments	No interaction (No- comments/ favourites/ retweets)
1.	Tamil Nadu	140.65	77.8	152	151	3667	18025	408	5
2.	Uttar Pradesh	86.12	521.8	1224	1221	42711	247049	6153	2
3.	Karnataka	77.45	121	435	433	6198	53281	1194	5
4.	Andhra Pradesh	70.83	30.9	223	222	3104	16409	431	2
5.	Telangana	40	14.9	422	407	650	3532	273	57

* Non-DMO Tweets are removed

For text analysis, only English tweets are to be studied. Out of 1221 tweets of UP tourism, 599 tweets were analysed. Other tweets were in Hindi; hence, they were excluded. For Tamil Nadu, Karnataka, and Telangana, 8, 34, and 6 tweets were removed because they were in Tamil, Kannada, and Telugu languages, respectively. Finally, a total of 2434 tweets were analysed. NodeXL software is used to preprocess the raw data and analyse tweet text's dominant attributes. Finally, the resulting output is evaluated on the three components of DI and factors – cognitive, affective, and constructive (Marine-Roig, 2021; Mohammed et al., 2021). The data shows:

- UP Tourism has the highest number of followers and tweets, with 99.59% interaction
- Telangana tourism has the least tweets, with 67.54% interaction. Out of the 422 tweets, 50 tweets (8.44%) relate to the Haritha Chain of hotels
- UP tourism, Tamil Nadu, and Karnataka tourism also tweet in their local language.
- The most liked (4364) and retweeted tweets (628) are of UP tourism. The tweet is of the Deepavali festival <https://t.co/E9uYYqXdSt>, and the most commented tweet is of Jama Masjid of Jaunpur tweet with 546 comments.
- Initial screening of the 5 DMO pages shows that all have the verified account except AP tourism (AP Tourism@Tourism_AP), which has no blue badge.

Engagement Metrics

The descriptive analysis of the DMO engagement factors (Table 4) shows that UP Tourism is the most tweeted page (Mean: 35.15), most tweets as favourites (Mean: 202.66) and most comments (Mean: 6.42). On the contrary, the Telangana Twitter page has the least engagement metrics.

Besides measuring the data in central tendency and standard deviation, a skewness measure is done (Drivas et al., 2022). The skewness scores show all the values are positive, indicating that most values are closer to the minimum.

Table 4: Descriptive statistics results of the DMO engagement factors

DMO state	Retweets			Favourites			Comments		
	Mean	Standard Deviation	Skewness	Mean	Standard Deviation	Skewness	Mean	Standard Deviation	Skewness
Tamil Nadu	26.57	34.80	6.97	123.45	107.13	2.47	4	10.55	6.90
Uttar Pradesh	35.15	39.84	5.40	202.66	259.96	6.33	6.42	19.94	21.50
Karnataka	15.45	21.02	5.19	125.07	166.26	5.78	3.99	6.47	5.43
Andhra Pradesh	14.23	13.96	3.42	74.58	54.18	1.57	2.61	1.85	2.33
Telangana	4.01	5.89	4.62	11.84	21.53	4.11	1.57	2.19	7.90

Text Analysis

Since DI is the holistic impression made by the DMOs, studying the text in the tweet becomes necessary. In the study on Airbnb online reviews or comments destination image (Lalicic, L., Marine-Roig, E., Ferrer-Rosell, B., & Martin-Fuentes, 2021) the frequency of words are ranked chronologically to understand the destination image formation. In this study the authors have adopted the method to rank the frequently used hashtags, words and word pairs in the post. Tables 5,6 and 7 show the top hashtags, words and word pairs. The numbers in brackets represent the frequency of the occurrence of these words.

Table 5: Top Hashtags

Tamil Nadu	Uttar Pradesh	Karnataka	Andhra Pradesh	Telangana
#tamilnadutourism (85)	#upnahidekhatohindi anahidekha (670)	#nammakarnataka (222)	#andhrapradeshtourism (62)	#telanganatourism (171)
#incredibleindia (66)	#uptourism (196)	#travelkarnataka (190)	#amazingandhra (52)	#telangana (101)
#ttdc (43)	#ummazingup (163)	#tourism (180)	#andhrapradeshtourism https (23)	#tstdc (79)
#tamilnadu (25)	#varanasi (128)	#karnatakadiaries (167)	#visakhapatnam (17)	#harithahotels (21)
#enchaintingamilnadu (18)	#dekhoapnadesh (93)	#travel (118)	#arakuvalley (12)	#hyderabad (20)
#tourism (13)	#devdeepawali202 (46)	#traveldiaries (52)	#thisisap (12)	#stayhome (20)
#temple (6)	#ayodhya (44)	#explorekarnataka (45)	#vijayawada (10)	#warangal (15)
#ooty (6)	#uttarpradesh (41)	#travelgram (36)	#dekhoapnadesh (8)	#tstdchotels (13)
#kanyakumari (5)	#deepotsav2020 (39)	_#nammakarnataka (29)	#dindi (8)	#tstdctours (11)
#hillstation (4)	#navratri (38)	#exploremadu (29)	#eastgodavaridistrict (7)	#quarantinequiz (8)
#falls (4)			#beachesofap (7)	#staysafe (8)
			#kadapa (7)	#ecotourism (8)

Table 6: Top Words

Tamil Nadu	Uttar Pradesh	Karnataka	Andhra Pradesh	Telangana
tamil (41)	temple (107)	karnataka (117)	tourism (55)	tour (64)
nadu (38)	place (90)	tourism (61)	located (37)	Telangana (63)
tamilnadu (25)	one (87)	visit (50)	district (36)	travel (57)
hotel (23)	visit (81)	more (43)	approx. (21)	visit (55)
book (23)	here (73)	one (43)	godavari (21)	day (55)
one (22)	uttar (65)	time (38)	stay (21)	starting (52)
located (21)	pradesh (63)	experience (35)	famous (20)	tourism (51)
district (20)	myogiadityanath (62)	nature (33)	tourist (19)	tstdc (51)
temple (19)	city (58)	state (32)	visakhapatnam (18)	book (45)
india (16)	built (57)	destination (30)	beach (18)	more (42)
ooty (14)				temple (37)

Table 7:Top Word Pairs

Tamil Nadu	Uttar Pradesh	Karnataka	Andhra Pradesh	Telangana
#tamilnadutourism & #incredibleindia (39)	#ummazingup & #upnahidekhatohind ianahidekha (86)	#tourism & #karnatakadiaries (145)	andhra & pradesh (86)	#telanganatourism & #telangana (82)
tamil & nadu (38)	#upnahidekhatohind ianahidekha & #ummazingup (69)	#nammakarnataka & #tourism (134)	pradesh & tourism (30)	1800 & 425 (22)
#ttdc & #tamilnadutourism (23)	#dekhoapnadesh & #upnahidekhatohind ianahidekha (66)	#karnatakadiaries & #travelkarnataka (129)	district & andhra (23)	#telanganatourism & #tstdc (22)
hotel & tamilnadu (18)	uttar & pradesh (63)	#travelkarnataka & #travel (103)	#andhrapradeshtourism & #amazingandhra (17)	#tstdc & #telanganatourism (22)
state & tamil (10)	#navratri & #navratrispecial (35)	#travel & #traveldiaries (48)	godavari & district (16)	425 & 46464 (19)
#tamilnadutourism & #enchantingtamilnadu (8)	#varanasi & #upnahidekhatohind ianahidekha (35)	#traveldiaries & #travelgram (32)	#amazingandhra & #andhrapradeshtourism (14)	telangana & tourism (15)
district & tamil (6)	correct & answer (32)	#exploremadu & #nammakarnataka (28)	east & Godavari (12)	rooms & starting (14)
#tamilnadu & #ttdc (5)	#uptourism & #upnahidekhatohind ianahidekha (23)	karnataka & tourism (28)	located & approx. (12)	more & details (12)
#tamilnadu & #tamilnadutourism (5)	wildlife & sanctuary (23)	#travelgram & #explorekarnataka (24)	tourism & wishing (10)	1 & day (12)
#tamilnadu & #tourism (5)	#uptourism & #uptrivia (22)	#vibrant & #colours (16)	stay & safe (10)	call & 1800 (11)
indian & state (5)				c & rooms (11)
				#tstdchotels & #harithahotels (11)

Coding results

The results of Tables 5, and 6 are coded in Cognitive, Affective, and Conative attributes. Hashtags and words, for instance, #andhrapradeshstourism, #ecotourism, tour, #exploremadu, etc., are categorised under cognitive attributes as these words indicate information, awareness or knowledge related to place or location among users. Whereas Hashtags like #dekhoapnadesh (which translates to 'see our country/ homeland'), #nammakarnataka ('namma' means 'our') or myogiadityanath (Mr Yogi Adityanath is the current Chief Minister of Uttar Pradesh - State of India) which imbibe emotional connect to a place of people are categorised under the affective domain. For Conative attributes, words such as book, #staysafe, #traveldiaries etc are action words which can help or imbibe users to plan their activities. A brief description of the coding is in Table 8:

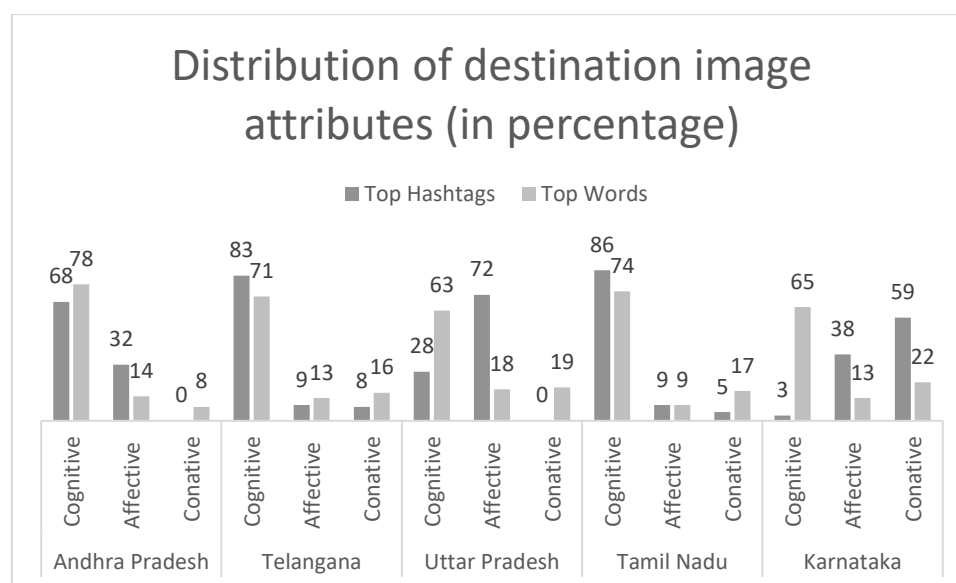
Table 8: Coding description

Attributes	Description	Examples
Cognitive	The words or hashtags that primarily provide knowledge of the destination and can create awareness are categorised into the cognitive domain. Words related to places and giving information or references to places or events are also included in this domain.	#andhrapradeshstourism, #andhrapradeshstourismhttps, #visakhapatnam, #arakuvalley, #vijayawada, #dindi, #eastgodavaridistrict, #beachesofap, #kadapa, tourism, located, district, approx., Godavari, tourist, Visakhapatnam, #telanganatourism, #telangana, #tstdc, #hyderabad, #warangal, #ecotourism, tour, Telangana, travel, visit, day, tourism, tstdc, temple, #uptourism, #varanasi #ayodhya, #uttarpradesh, temple, place, one, Uttar Pradesh, city, #tamilnadutourism, #incredibleindia #ttde #tamilnadu #tourism #temple #ooty #kanyakumari tamil, nadu, tamilnadu, one, district, temple, india, ooty, #travelkarnataka, #tourism, #travel, #traveldiaries, #explorekarnataka, #travelgram, #exploremadu, #karnatakaturism, Karnataka, tourism, visit, more, one, time, state, destination, temple
Affective	Affective destination image is related to emotions or experiences associated with place. Those hashtags or words expressing a sentimental aspect, such as personal or emotional connection, are categorised into the affective domain.	#amazingandhra, #thisisap, #dekhoapnadesh, famous, beach, #harithahotels, #tstdchotels, #tstdctours, more, haritha, #upnahidekhatohindianahidekha, #ummazingup, #dekhoapnadesh, #devdeepawali2021, #deepotsav2020, #navratri, here, myogiadityanath, #enchaintingamilnadu, #hillstation, #falls, hotel, #nammakarnataka, #karnatakadiaries, #nammakarnataka, experience, nature
Conative	The words or hashtags related to action, motivation or intention related to travel planning are categorised under the conative domain.	Stay, #stayhome, #quarantinequiz, #staysafe, starting, book, visit, built, book, located

The DMO, in their tweet, shares information about their destination, accommodation, amenities, events, transport, etc. After doing the text analysis, the results indicate that (Figure 2) the dominant attributes of the tweets of all the DMOs through which they were showcasing their DI are cognitive. In a few cases, it was also an affective and conative component. Further analysis of the top hashtags shows Tamil Nadu uses cognitive factors more than other states, with 86%, whereas Karnataka is the least with 3%. Uttar Pradesh uses affective attributes more in their hashtags with 72%, and surprisingly, conative attributes are least used by the DMOs in their hashtags, except for Karnataka, which has 59%.

The analysis of the top words of the DMO's pages shows that Karnataka is dominantly using cognitive words (87%) in their tweets and Uttar Pradesh with the least (63%) as compared to other states. Affective attributes range between 9% to 18% for all the states, whereas Karnataka has no words related to conative attributes.

Figure 2: Top Hashtags and Word distribution

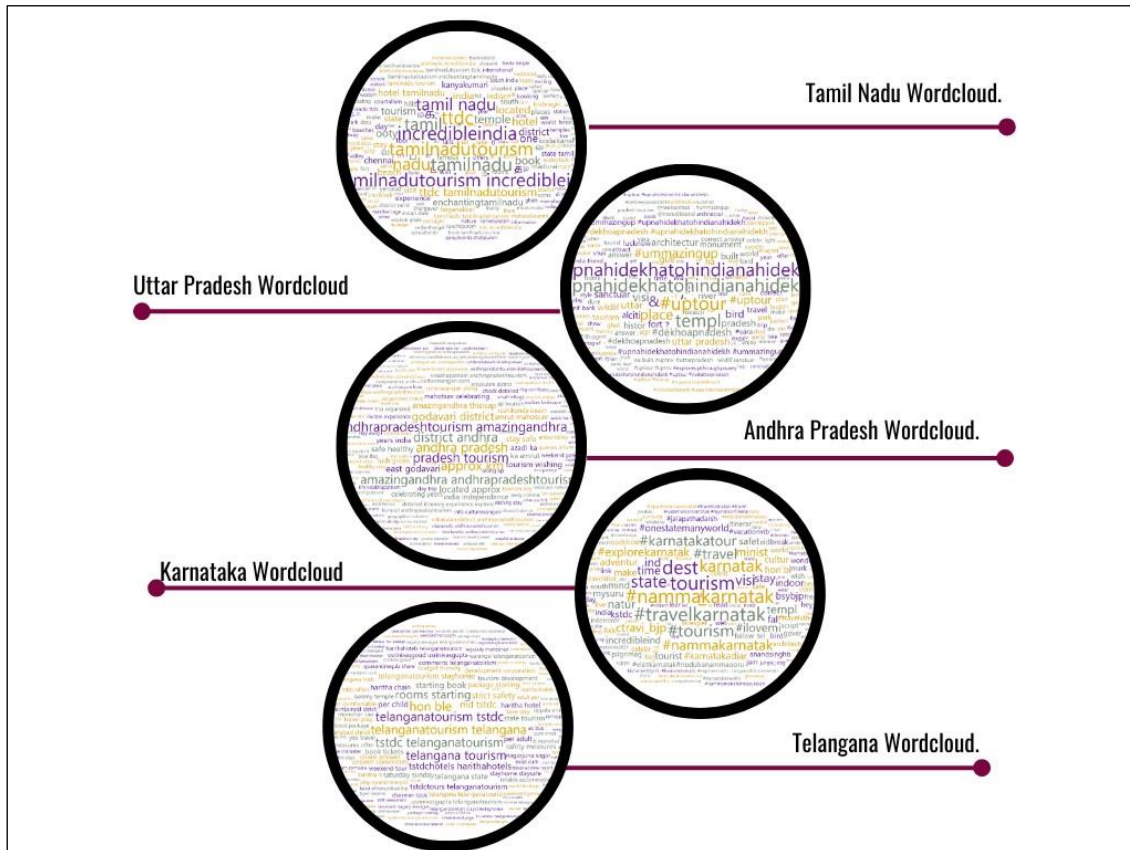


Visualisation through Word Cloud

Figure 3 shows the Word Cloud representation of the widely used attributes in the tweets by the respective DMOs. One common thing in all these visual representations is using their individual state's names in their tweets. Some other prominent words in Tamil Nadu Word Cloud are Incredible India, Enchanting Tamil Nadu which is the tagline of Tamil Nadu State tourism board, ttdc (Tamil Nadu Tourism Development Corporation),

Kanyakumari (southern most tip of India) etc. For Uttar Pradesh (UP) Wordcloud their tagline ‘#upnahidekhatohindianahidekha’ which translates to ‘you have not seen India if you have not seen UP’, #ummazingup, bird, visit are few of the prominent words. Karnataka Wordcloud has prominent words #nammakarnataka which translates to ‘My Karnataka’, #tourism, State, tourism etc.

Figure 3: Wordcloud



The visual representation of Andhra Pradesh state tourism department using mostly amazingandhra (their tagline), east godavari (district of coastal Andhra Pradesh), tourism, wishing etc. Lastly Telangana state tourism wordcloud shows it is mostly using accommodation related words such as harithahotels, rooms starting, budget friendly etc in their tweets.

RESULTS & DISCUSSION

The recent pandemic wave has changed our lives and forced us to adapt to the digital world. It also allowed the DMOs to explore the digital world. SM's diverse

characteristics enable marketers to upload different types of content on their pages, including videos, live streams, infographics, pictures, polls, contests, etc. It is an effective tool for branding, marketing, promotion and communication. A planned strategy and a watch on the competitors or similar pages (Kumar et al., 2021) can help the DMOs engage effectively with the audience and increase followers. DMO's Twitter account plays a vital role in creating awareness among tourists about the destination. To begin with, DMOs are using various DI factors in their tweets to showcase their unique attraction. In general, all the DMO's tweet analysis shows that these accounts tweet wildlife, beaches, scenic beauties, transport, festivals, forts, monuments, temples, travel, accommodation, etc., in their post. Some accounts also retweeted/replied to bloggers or influential accounts. The DMO's are predominantly using cognitive component followed by affective and the least conative component in their posts (tweets). A combination of DI components will help in showcasing all the features of their destination (Herath et al., 2020). Visual analysis of the text analysis shows that all the DMO's are frequently using their state name and tagline to promote their destination. Posting in local languages is important (Roque & Raposa, 2016) which is evident from the findings that UP tourism, Tamil Nadu, and Karnataka tourism boards are posting in their local language Hindi, Tamil and Kannada respectively in their respective X account. Whereas earlier study on Indian DMO's Facebook pages shows a lack of posts in their local language (Kumar et al., 2021). This elucidates the DMOs strategies for a wider reach targeted towards improving engagement and showcasing the adaptability towards new technologies.

DMO's Twitter account also plays a crucial role in sharing information about the state tourist attractions and available facilities. In this context, this study highlights the significance of social media a) in creating a virtual presence, b) in building a positive destination image among intended visitors, c) in identifying attributes for improving engagement among users and followers, d) in considering the inclusion of travel bloggers and influencers (Jin & Cheng, 2020), and e) start a healthy conversation in their accounts.

LIMITATIONS AND FUTURE STUDIES

The study has a direct theoretical and practical implication, but there is scope for more work. First, this study is limited to only 5 states which can be extended to all the state tourism departments of India which can be replicated for other industries and other

social media applications. Secondly, this study has followed a content analysis which can be extended to in-depth sentiment analysis with the help of deep learning algorithms, statistical tools, etc. Finally, since this is a qualitative study future work can incorporate tourists aspect, via a quantitative technique or in-depth interviews with marketers.

REFERENCES

Arifiansyah, R., Raja, D., & Saragih, U. (2020). The Role of social media And Destination Image on Visiting Decision: A Case Study in Taman Mini Indonesia Indah. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 12745–12763.

Aydin, G. (2020). Social media engagement and organic post effectiveness: A roadmap for increasing the effectiveness of social media use in hospitality industry. *Journal of Hospitality Marketing and Management*, 29(1), 1–21. <https://doi.org/10.1080/19368623.2019.1588824>

Budi, T. S. W., Wen, S. C., & Ratnawati, K. (2017). Using Social Media Mining to Understand Public Opinion towards Destination Image. *Asia Pacific Management and Business Application*, 5(3), 137–160. <https://doi.org/10.21776/ub.apmba.2017.005.03.3>

Bui, V., Alaei, A. R., Vu, H. Q., Li, G., & Law, R. (2021). Revisiting Tourism Destination Image: A Holistic Measurement Framework Using Big Data. *Journal of Travel Research*, 0–1. <https://doi.org/10.1177/00472875211024749>

Charlesworth, A. (2015). An introduction to social media marketing. In *Choice Reviews Online* (Vol. 52, Issue 11). <https://doi.org/10.5860/choice.191389>

Charlesworth, A. (2018). *Digital Marketing: A Practical Approach*.

Clarke, H., & Hassanien, A. (2020). An evaluation of Toronto's destination image through tourist generated content on Twitter. *International Journal of Customer Relationship Marketing and Management*, 11(2), 1–16. <https://doi.org/10.4018/IJCRMM.2020040101>

Curlin, T., Jaković, B., & Miloloža, I. (2019). Twitter usage in Tourism: Literature Review. *Business Systems Research*, 10(1), 102–119. <https://doi.org/10.2478/bsrj-2019-0008>

de las Heras-Pedrosa, C., Millan-Celis, E., Iglesias-Sánchez, P. P., & Jambrino-

Maldonado, C. (2020). Importance of social media in the image formation of tourist destinations from the stakeholders' perspective. *Sustainability (Switzerland)*, 12(10), 1–27. <https://doi.org/10.3390/su12104092>

Dedeoğlu, B. B., van Niekerk, M., Küçükergin, K. G., De Martino, M., & Okumuş, F. (2020). Effect of social media sharing on destination brand awareness and destination quality. *Journal of Vacation Marketing*, 26(1), 33–56. <https://doi.org/10.1177/1356766719858644>

Drivas, I. C., Kouis, D., Kyriaki-Manessi, D., & Giannakopoulou, F. (2022). Social Media Analytics and Metrics for Improving Users Engagement. *Knowledge*, 2(2), 225–242. <https://doi.org/10.3390/knowledge2020014>

Echtner, C. M., & Ritchie, J. R. B. (2003). The Meaning and Measurement of Destination Image. *The Journal of Tourism Studies*, 14(1), 37–48.

Fernández-Cavia, J., Marchiori, E., Haven-Tang, C., & Cantoni, L. (2017). Online communication in Spanish destination marketing organizations: The view of practitioners. *Journal of Vacation Marketing*, 23(3), 264–273. <https://doi.org/10.1177/1356766716640840>

Garay Tamajón, L., & Cànoves Valiente, G. (2017). Barcelona seen through the eyes of TripAdvisor: actors, typologies and components of destination image in social media platforms. *Current Issues in Tourism*, 20(1), 33–37. <https://doi.org/10.1080/13683500.2015.1073229>

Gartner, W. C. (1994). Image formation process. *Journal of Travel and Tourism Marketing*, 2(2–3), 191–216. https://doi.org/10.1300/J073v02n02_12

Hahm, J. J., & Tasci, A. D. A. (2020). Country image and destination image of Brazil in relation to information sources. *Journal Of Hospitality and Tourism Insights*, 3(2), 95–114. <https://doi.org/10.1108/JHTI-04-2019-0057>

Hays, S., Page, S. J., & Buhalis, D. (2013). Current Issues in Tourism Social media as a destination marketing tool : its use by national tourism organisations. *Current Issues in Tourism*, 3500. <https://doi.org/10.1080/13683500.2012.662215>

Herath, H., Hemmington, N., & Poulston, J. (2020). “Dirty pictures”—responsible

photographic representation of tourism destinations. *Journal of Travel and Tourism Marketing*, 37(6), 663–678. <https://doi.org/10.1080/10548408.2020.1789026>

Hines, K. (2022). *Social Media Usage Statistics For Digital Marketers In 2022*. <https://www.searchenginejournal.com/top-social-media-statistics/418826/>

Hvass, K. A., & Munar, A. M. (2012). The takeoff of social media in tourism. *Journal of Vacation Marketing*, 18(2), 93–103. <https://doi.org/10.1177/1356766711435978>

International Telecommunication Union (ITU). (2023). *STATISTICS*. United Nations. <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>

Irfan, A., Rasli, A., Sami, A., & Liaquat, H. (2017). Role of social media in promoting education tourism. *Advanced Science Letters*, 23(9), 8728–8731. <https://doi.org/10.1166/asl.2017.9959>

Jimura, T., & Lee, T. J. (2020). The impact of photographs on the online marketing for tourism: The case of Japanese-style inns. *Journal of Vacation Marketing*, 26(3), 354–364. <https://doi.org/10.1177/1356766720913066>

Jin, X., & Cheng, M. (2020). Communicating mega events on Twitter: implications for destination marketing. *Journal of Travel & Tourism Marketing*, 37(6), 739–755. <https://doi.org/10.1080/10548408.2020.1812466>

Ketter, E., & Avraham, E. (2021). #StayHome today so we can #TravelTomorrow: tourism destinations' digital marketing strategies during the Covid-19 pandemic. *Journal of Travel and Tourism Marketing*, 38(8), 819–832. <https://doi.org/10.1080/10548408.2021.1921670>

Khaki, A., Shaban, R., & Mir, M. A. (2023). Assessing the Impact of Destination Image in the Selection of a Destination: Mediating role of e-WOM. *Atna Journal of Tourism Studies*, 18(2), 1–38. <https://doi.org/10.12727/ajts.30.1>

Kim, H. J. M., & Chakraborty, S. (2024). Exploring the diffusion of digital fashion and influencers' social roles in the Metaverse: an analysis of Twitter hashtag networks. *Internet Research*, 34(1), 107–128. <https://doi.org/10.1108/INTR-09-2022-0727>

Kumar, P., Mohan, M. J., & Venkata, R. Y. (2021). Analysing tourism destination promotion through Facebook by Destination Marketing Organizations of India. *Current Issues in Tourism*, 1–16. <https://doi.org/10.1080/13683500.2021.1921713>

Lalicic, L., Marine-Roig, E., Ferrer-Rosell, B., & Martin-Fuentes, E. (2021). Destination image analytics for tourism design: An approach through Airbnb reviews. *Annals of Tourism Research*. <https://doi.org/https://doi.org/10.1016/j.annals.2020.103100>

Lin, M. S., Liang, Y., Xue, J. X., Pan, B., & Schroeder, A. (2021). Destination image through social media analytics and survey method. *International Journal of Contemporary Hospitality Management*, 33(6), 2219–2238. <https://doi.org/10.1108/IJCHM-08-2020-0861>

Lund, N. F., Scarles, C., & Cohen, S. A. (2020). The Brand Value Continuum: Countering Co-destruction of Destination Branding in Social Media through Storytelling. *Journal of Travel Research*, 59(8), 1506–1521. <https://doi.org/10.1177/0047287519887234>

Marine-Roig, E. (2021). Measuring Online Destination Image, Satisfaction, and Loyalty: Evidence from Barcelona Districts. *Tourism and Hospitality*, 2(1), 62–78. <https://doi.org/10.3390/tourhosp2010004>

Marzouk, A. M. (2021). Egypt's image as a tourist destination: an exploratory analysis of DMO's social media platforms. *Leisure/ Loisir*. <https://doi.org/10.1080/14927713.2021.1971554>

Micera, R., & Crispino, R. (2017). Destination web reputation as “ smart tool ” for image building : the case analysis of Naples city-destination. *International Journal of Tourism Cities*, 3(4), 406–423. <https://doi.org/10.1108/IJTC-11-2016-0048>

Min. Of Tourism, G. (2021). *India Tourism Statistics FY'21. December*, 2006.

Mohammed, H. T., Hyseni, L., Bui, V., Gerritsen, B., Fuller, K., Sung, J., & Alarakhia, M. (2021). Exploring the use and challenges of implementing virtual visits during COVID-19 in primary care and lessons for sustained use. *PLoS ONE*, 16(6 June), 1–20. <https://doi.org/10.1371/journal.pone.0253665>

Molinillo, S., Liébana-Cabanillas, F., & Anaya-Sánchez, R. (2017). Destination Image on the DMO's Platforms: Official Website and Social Media. *Tourism & Management Studies*, 13(3), 5–14. <https://doi.org/10.18089/tms.2017.13301>

N A Deraman, A. G. B., Samah, K. A. F. A., Jono, M. N. H. H., M A M Isa, S., & Saad1. (2021). A Social Media Mining Using Topic Modeling and Sentiment Analysis on Tourism in Malaysia During A Social Media Mining Using Topic Modeling and Sentiment Analysis on Tourism in Malaysia During Covid19. *IOP Conference Series: Earth and Environmental Science PAPER*. <https://doi.org/10.1088/1755-1315/704/1/012020>

Nadeau, J., Wardley, L. J., & Rajabi, E. (2022). Tourism destination image resiliency during a pandemic as portrayed through emotions on Twitter. *Tourism and Hospitality Research*, 22(1), 60–70. <https://doi.org/10.1177/14673584211038317>

Nave, M., Rita, P., & Guerreiro, J. (2018). A decision support system framework to track consumer sentiments in social media. *Journal of Hospitality Marketing and Management*, 27(6), 693–710. <https://doi.org/10.1080/19368623.2018.1435327>

Nusair, K., Butt, I., & Nikhashemi, S. R. (2019). A bibliometric analysis of social media in hospitality and tourism research. *International Journal of Contemporary Hospitality Management*, 31(7), 2691–2719. <https://doi.org/10.1108/IJCHM-06-2018-0489>

Philander, K., & Zhong, Y. Y. (2016). Twitter sentiment analysis: Capturing sentiment from integrated resort tweets. *International Journal of Hospitality Management*, 55, 16–24. <https://doi.org/10.1016/j.ijhm.2016.02.001>

Qian, J., Wei, J., & Law, R. (2018). Review of critical discourse analysis in tourism studies. *International Journal of Tourism Research*, 20(4), 526–537. <https://doi.org/10.1002/JTR.2202>

Review, W. P. (2022). *Internet Users by Country 2022*. World Population Review. <https://worldpopulationreview.com/country-rankings/internet-users-by-country>

Rodríguez, M., Nassanbekova, S., Pérez, L. M., & Uruzbayeva, N. (2020). The impact of information quality in DMOs' Facebook pages on the formation of destination image in the Silk Road: the case of Almaty, Kazakhstan. *Current Issues in Tourism*, 23(13), 1587–1592. <https://doi.org/10.1080/13683500.2019.1646225>

Roque, V., & Raposa, R. (2016). Social media as a communication and marketing tool in tourism: an analysis of online activities from international key player DMO. *Anatolia*, 27(1), 58–70. <https://doi.org/10.1080/13032917.2015.1083209>

Siregar, N. S. S., Nasrul, Yusuf, Srikaningsih, A., & Mokodompit, E. A. (2020). Social media for tourism marketing. *Journal of Environmental Treatment Techniques*, 8(1), 262–264.

Sontayasara, T., Jariyapongpaiboon, S., Promjun, A., & Seelpipat, N. (2021). *Twitter Sentiment Analysis of Bangkok Tourism During COVID-19 Pandemic Using Support Vector Machine Algorithm*. 16(1).

Stepaniuk, K. (2015). The relation between destination image and social media user engagement – theoretical approach. *Procedia - Social and Behavioral Sciences*, 213, 616–621. <https://doi.org/10.1016/j.sbspro.2015.11.459>

Stepchenkova, S., & Zhan, F. (2012). Visual destination images of Peru : Comparative content analysis of DMO and user-generated photography q. *Tourism Management*, 1–12.

Tavakoli, R., & Wijesinghe, S. N. R. (2019). The evolution of the web and netnography in tourism : A systematic review. *Current Issue in Tourism*, 29(October 2018), 48–55. <https://doi.org/10.1016/j.tmp.2018.10.008>

Taylor, D. G. (2020). Putting the “self” in selfies: how narcissism, envy and self-promotion motivate sharing of travel photos through social media. *Journal of Travel and Tourism Marketing*, 37(1), 64–77. <https://doi.org/10.1080/10548408.2020.1711847>

Twitter Users by Country 2022. (n.d.). Retrieved December 1, 2022, from <https://worldpopulationreview.com/country-rankings/twitter-users-by-country>

United Nations. (n.d.). *Internet uptake has accelerated during the pandemic*. International Telecommunication Union (ITU). Retrieved December 1, 2022, from <https://www.itu.int/itu-d/reports/statistics/facts-figures-2021/index/>

Williams, N. L., Wassler, P., & Ferdinand, N. (2020). Tourism and the COVID-(Mis)infodemic. *Journal of Travel Research*, December. <https://doi.org/10.1177/0047287520981135>