

Using Social Media Mining to Understand Public Opinion towards Destination Image

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Abstract

In the middle of the highly competitive tourism market, development of successful destination image is paramount towards memorable experience for visitors. This study aims to support tourism stakeholders from the service providers and national tourism by analyzing, and extracting meaningful patterns from social media, e.g. Twitter, based on destination image information. This data plays an important role for destination marketers to distinguish their destination among others based on Twitter Statistics and key public opinion towards destination image attributes. London and New York were used as destination cities under the analysis of text mining with the concept linkage approach. Results show five distinct keywords attributed to each city. Each keyword found to be relevant in representing the image of destination cities based on the public opinion on Twitter. For the keyword “Culture and Cultural”, term “British” and “Black” represent London and New York the best, respectively. In keyword “Entertainment”, the term “James Bond” and “Broadway” represent London and New York, respectively. In keyword “Festival”, term “Lumiere” and “Global Citizen Festival” are best in describing the city of London and New York, respectively. In keyword “Food”, term “traditional British food” best describes London and “Food truck” best describes New York. The keyword “Shopping” exhibits term “Etsy” as the image of London and “Kate Spade” as the image for New York. This research reveals the value of social media analysis and the ability of text mining as an effective technique to extract opinions from the vast amount of available social media data. Recommendations related to tourism strategic plan are made to facilitate possible future destination image studies.

Keywords

Destination Image, Social Media, Text Mining, Concept Links

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Introduction

Over the past several decades, international tourism has been steadily increasing, as well as the importance of the tourism industry as one of the leading economic sectors in the world, and represents a major source of income, employment, exports, and taxes. According to World Tourism Organization (2015), International tourist arrivals grew by 4.4% in 2015 to reach a total of 1,184 million in 2015. Some 50 million more tourists (overnight visitors) traveled to international destinations around the world last year as compared to 2014. In 2015 the tourism sector (domestic and international) contributed almost USD 7,170.3 billion (9.8% of GDP) in 2015, and is forecast to rise by 3.5% in 2016, and to rise by 4.0% to USD10, 986.5 billion (10.8% of GDP) in 2026 to the global economy by World Travel & Tourism Council (2016).

With confirmed strong linkage effects, the tourism industry also provides almost 284 million job opportunities, accounting for nearly 9.5% of global employment. In addition, according to the World Bank Carbon Finance Unit (CFU), the tourism sector is relatively eco-friendly compared to the manufacturing sector and has led to more sustainable development. With this kind of facts, a lot of tourism countries in the world become more aware of the benefit of tourism industry itself. So, they start to create a strategic policy in intention to promote their top list tourist destination for the domestic and international visitors.

A tourist destination (e.g. city, region or site) is at present often no longer seen as

a set of distinct natural, cultural, artistic or environmental resources, but as an overall appealing product available in a certain area: a complex and integrated portfolio of services offered by a destination that supplies a holiday experience which meets the needs of the tourist (Armstrong, Mok, Go, & Chan, 1997; van Leeuwen & Nijkamp, 2010). National tourism organizations around the globe start to realize the importance of image in tourist destination as one of the marketing policy in the middle of the competitive tourism market. Image of a destination is an important factor in determining its popularity with visitors and is therefore crucial to its marketing success (Hsu, Wolfe, & Kang, 2004).

Changes in the tourism sector, competition among products and tourist destinations and changes in tourists' expectations and habits, all means tourist destinations must be conceived as brands that have to be managed from a strategic point of view. From that perspective, brand image plays a fundamental role in the success of tourist destinations, since image, seen as a mental picture formed by a set of attributes that define the destination in its various dimensions, exercises a strong influence on consumer behavior in the tourism sector Asuncion Beerli and Martin (2004); (Asunción Beerli & Martín, 2004). Although not explicitly examined in the context of branding, destination image should be regarded as a pre-existing concept corresponding to destination branding.

Destination image plays an important role for destination marketers so as to differentiate their destination in this highly competitive market (Yilmaz, Yilmaz, İçigen, Ekin, & Utku, 2009).

Early work done by Gunn (1972), he stated that destination image made up of two components of the image, the components were organic images and induced images. Organic images formed by individuals themselves through past experiences with destinations and unbiased sources of information. Sources of organic images include news, reports, newspaper articles, movies, the internet, television, magazines, and personal sources, such as friends and family. Then Induced images created through information received from external sources, on the other hand, is formed through the influence of tourism promotions directed by marketers.

So, to understand how customers acquire information is important for marketing management decisions. This is especially true for services, travel and tourism products. Research has demonstrated that tourist information is a valuable concept in understanding destination image and the destination choice process of tourists. Information sources have been included in many research works as important factors for the analysis of tourist behavior (Molina, Gomez, & Martín-Consuegra, 2010).

In addition, the information sources of tourist activities have changed greatly over the past fifteen years, due firstly to the impact of new technologies. It is known that the Internet as a whole has many potential benefits for destination image as one of them as the information source (Hurley, Ouzts, Fischer, & Gomes, 2013). Internet as one of the most recent sources of the induced component of destination image formation is meant to communicate the marketing message to the destination and suppliers to a chosen

travel audience.

Research on the internet as an image forming agent is still in the early stage. While considerable attention has been paid in the past to research issues related to internet and destination image, there have been few attempts to focus on the social media aspects. Considering also that internet has drastically transformed the distribution and marketing of tourism products. Especially social media, turn as a medium that importantly considers nowadays in tourism industries. The tourism industry is one of the sectors with a very close relationship with the new information and communication technologies. It is deemed that a good understanding of the quality and quantity of the mechanisms for spreading information online can facilitate tourism managers (whether of a DMO a hotel or any other tourism related company) to market effectively own organization online (Hays, Page, & Buhalis, 2013).

The analysis of social media can provide the tourism industry with business analytic results in the short term (real-time), medium and longer term horizons (Schmallegger & Carson, 2008). In this, it is essentially the modern form of 'word of mouth', a long established and important method of finding out and influencing decisions in the tourism and hospitality industry (Dellarocas, 2003). Another research stated that social media influenced by social networking is pressing suppliers and buyers who value more and more the opinions, reviews, and referrals of fellow travelers. These information agents represent a more reliable and trustworthy source than the suppliers themselves (Miguéns, Baggio, & Costa, 2008).

Finally, it is no surprise then to find out that travel and tourism related topics are among the most popular issues in this environment. Travel plans, destinations and hotels reviews, tourist guides, suggestions for restaurants or exhibitions are ever growing discussion subjects and term for social media in tourism industries has started denoting this trend.

Social media' can be generally understood as Internet-based applications that carry a variety of applications in the technical sense which allow consumers to "post", "tag", "dig", or "blog", and so forth, on the internet. The contents generated by these social media include a variety of new and emerging sources of online information that are created, initiated, circulated, and used by consumers with the intent of educating each other about products, brands, services and issues (Xiang & Gretzel, 2010). The social media users tend to acknowledge the opinion that they get from the online platforms, so that's why the importance of social media in generating opinion from the consumers about product brand or services is needed to be investigated. Exposure to news, civic, or opinion information increasingly occurs through social media. How do these online networks influence people nowadays in ways consuming and learning information.

According to the report published by eBizMBA Inc. in May 2016, the top 3 most popular social networking sites were Facebook, Twitter, and LinkedIn (eBizMBA Inc., 2016). Considering the accessibility of data and attributes of each platform, this study chose Twitter (with approximate 310 million monthly visitors) and applied the text contents,

which was called tweets as materials to execute analysis. This study also concerning the reported study posted in 2015, there was a depth observation conducted by Master Card in analyzing the Top 20 Global Destination Cities Index. This Index chart is described how 132 of the most important cities in the world are connected through air travel - how many international visitors arrive at each of these 132 cities from the other cities (MasterCard 2015 Global Destination Cities Index). Based on the report list, this research decided to investigate the 2 Global Destination Cities, they were London and New York.

The research applied text mining techniques to explore discussion related to destination image attributes such as Culture and Cultural, Entertainment, Festival, Food, and Shopping on social media Twitter. Social media mining is the process of analyzing, and extracting meaningful patterns from data in social media social media (Zafarani, Abbasi, & Liu, 2014). Many researchers have tried to use text mining techniques to analyze text data in social media networking site such as Facebook and Twitter. Mostafa (2013) proposed an in-depth research regarding social networks text mining for consumer brand sentiments towards famous brand like KLM, IBM, and T-Mobile in social media Twitter. In addition (He, Zha, & Li, 2013) presented a review on the text mining in-depth case study which applied text mining to analyze unstructured text content on Facebook and Twitter sites of famous pizza chains in the United States.

The main process for the text mining in this study is to turn the raw data into a meaningful result, the concept links

approach is helped the researchers to interpret results. Concept links help in understanding the relationship between words based on the co-occurrence of words in the document. We can identify and define concepts in the text by selecting a keyword and exploring the words that are associated with this keyword using concept links (Chakraborty, Pagolu, & Garla, 2014). By selecting a keyword such as “CITY” and term “KEYWORD” the researcher can identify and define concepts in the text, and explore words that are associated with the term. This study explored two level Concept Links. The first level terms directly related to the term CITY and term KEYWORD, and the Second level is further Exploration of terms appeared in the first level.

With a number of background reasons in underline this research, start from realizing the importance of tourism industry and its impact in marketing studies especially about destination images, then turn into the role of Twitter as the medium of social media networking as one of the trustworthy information resource based on the public opinion, follows up with the study by MasterCard and decided to choose the 2 of global destination cities as the object of this research and finally the last used text mining as the methodology in analyze the relation between each variable component. Overall this study illustrated of understanding the relation between destination images attributes used keywords towards a particular destination. Specifically, the study attempts to answer the following questions:

1. To understand the trends based on the Twitter Statistics of destination image

2. To identify key public opinion towards destination image attributes about the top destination

Theoretical and Conceptual Background

Destination Image

The concept of “image” that has been studied for several decades in such disciplines as social and environmental psychology, marketing, and consumer behavior, was introduced into tourism studies in the early 1970s by Hunt (1975), Mayo (1973), and Gunn (1972) and has since become one of the most researched topics in the field (Stepchenkova & Mills, 2010). Since then, several studies provided an overview of image articles in order to help researchers a better navigate in the field.

Interest of destination image studies has been conducting for more than 40 years. Despite this, many agree that the majority this studies carried out to date insufficiently theory-based, resulting in a lack of framework or solid conceptualization by Asunción Beerli and Martín (2004), some reasons for that are stated by Gallarza, Saura, and García (2002): 1) Complexity and multidimensionality of tourism product; 2) Destination marketing involves the consumer physically to moving to the behavior scenario; 3) Great subjectivity in providing a tourism service: images are mixed with impressions about residents, retailers, other tourists, and/or employees; 4) The intangibility of tourism service hinders image assessment as it depends on invisible elements of pre-visit selection and a pre-taste of the destination.

Nowadays, there is a general agreement among tourism researchers and academics that a positive destination image results in increased visitation and has an impact upon tourist evaluation and selection of destination (Hall, 2003). Based on the fact that tourists usually have a limited knowledge of tourism destination they have not previously visited, image fulfills an important function insofar as tourism destinations with stronger, positive and recognizable images have more probability of being chosen by the tourist. Second, it influences after-decision behavior, i.e. tourist satisfaction and intention to repeat the visit in the future. After a vacation, people form opinions on tourism destination's capacity to provide experiences that correspond with their needs and fit the image they had of the destination.

The definition of destination image has been interpreted differently by various researchers. Crompton set a definition of the image as the sum of beliefs, ideas, and impressions that people have of a place (Crompton, 1979). This definition relates to the individual, whereas other definitions acknowledge that images can be shared by groups of people. Image has also defined as an internalized, conceptualized and personalized understanding of what one knows (Ahmed, 1996). Kotler and Gartner in 2004 define a destination image as:

"The sum of beliefs and impressions people hold about the place. Images represent a simplification of a larger number of associations and pieces of information connected to a place. They are a product of the mind trying to process and pick out essential information from huge amounts of data about a place (p.

42)" (Kotler & Gertner, 2004)

The destination image is defined as an expression of knowledge, impressions, prejudices, imaginations and emotional thoughts an individual has a specific place (Lawson & Baud-Bovy, 1977). Further, destination image is defined as the perception of groups of people (Jenkins, 1999). Perceptions or impressions of a destination held by tourists with respect to the expected benefit or consumption values (Rajesh, 2013). In a present study, commonly cited the definition of destination image as an interactive system of thoughts, opinions, feelings, visualizations, and intentions toward a destination (Tasci & Gartner, 2007).

Destination Image Attributes

Performance of a destination can be measured through the perception of destination travel attributes to tourists in order to facilitate market segmentation and promotion. Travel attributes are set of attributes that describe a place as a travel destination (Heung & Quf, 2000). There are several studies in tourism indicate that the customers consider the attributes to decide on the goods and the same applies to tourists and destination. Echtner and Ritchie (1993) concluded in their research that every destination has a combination of functional or tangible attributes and psychological or abstract attributes. Several authors have attempted to look into the travel attributes of destinations. The reason is that tourists generally have limited knowledge about a destination that they have not visited and they often choose based on symbolic information acquired either from the media or from social groups (Armstrong & Mok, 1995). There are several studies stated by Ragavan,

Subramonian, and Sharif (2014) that in tourism literature indicated that tourists' overall satisfaction is determined by how the tourists evaluate the attributes related to the destination.

Destinations are comprised of various attributes that significantly affect visitors at different stages. For example, a favorable image of a destination formed by a combination of the destination's attributes (e.g., beautiful landscape, shopping opportunities, cultural exchange, infrastructure, safety, and activities) significantly affects individuals' destination choices (Chi & Qu, 2008; Echtner & Ritchie, 1993). The pioneering and comprehensive model developed by Echtner and Ritchie (1993) the destination image researchers were used following attributes to measure the destination image, the attributes were scenery or natural attractions, costs or price levels, climate, tourist sites or activities, nightlife and entertainment, sports facilities or activities, national parks or wilderness activities, local infrastructure, transportation, architecture or buildings, historic sites, museums, beaches, shopping facilities, accommodation facilities, cities fairs, exhibits, festivals, facilities for information and tours, crowdedness, cleanliness, personal safety, economic development or affluence, accessibility, degree of urbanization, extent of commercialization, political stability, hospitality or friendliness or receptiveness, different customs or culture, different cuisine or food and drink, restful or relaxing, atmosphere, opportunity for adventure, opportunity to increase knowledge, family or adult oriented, quality of service and fame or reputation.

Asunción Beerli and Martín (2004) categorized attributes into nine dimensions: (1) natural resources (i.e. weather, temperature, rainfall, hours of sunshine, beaches, quality of seawater, length of beaches, overcrowding of beaches, wealth of countryside, protected natural reserves, lakes, mountains, deserts, variety and uniqueness of flora and fauna); (2) tourist leisure and recreation (i.e. accommodation, number of beds, categories, quality, restaurants number, quality, bars, discos and clubs, hotels and self-catering, ease of access, excursions at destination, tourist centers and network of tourist information); (3) natural environment (i.e. beauty of the scenery, attractiveness, cleanliness, overcrowding, air and noise pollution and traffic congestion); (4) general infrastructure (i.e. development and quality of roads, airports and ports, private and public transport facilities, development of health services, development of telecommunications, development of commercial infrastructure, extent of building development); (5) culture, history, and art (i.e. festival, concerts, handicraft, gastronomy, folklore, religion, museums, historical buildings, monuments, customs and ways of life); (6) social environment (i.e. quality of life, underprivileged and poverty, language barriers, hospitality and friendliness of the local residents); (7) tourist infrastructure (i.e. accommodation, number of beds, categories, quality, restaurants number, quality, bars, discos and clubs, hotels and self-catering, ease of access, excursions at destination, tourist centers, network of tourist information); (8) political and economic factors (i.e. political stability, political tendencies, terrorist attacks, safety, crime rate, economic

development and prices); and (9) Leisure and recreations (i.e. golf, fishing, hunting, skiing, entertainment and sports activities, scuba diving, trekking, adventure activities, theme parks, water parks, zoos, casinos, nightlife and shopping).

Chi and Qu (2008) classified attributes into nine aspects, (1) travel environment (i.e. safe and secure environment, clean and tidy environment, friendly and helpful local people, tranquil & restful atmosphere and pleasant weather); (2) natural attractions (i.e. Scenic mountain & valleys, scenery & natural attractions, gardens & springs, scenic drive, parks, lakes, rivers, wildlife, caves and underground formations); (3) entertainment & events (i.e. shows or exhibitions, cultural events & festivals, quality, fun, western music, nightlife and entertainment); (4) historic attractions (i.e. history & heritage and Vintage buildings); (5) infrastructure (i.e. restaurants, cuisine, shop facilities and accommodations); (6) accessibility (i.e. traffic flow and parking information, parking facilities, access to the area and affordable trolley system); (7) relaxation (i.e. spa, soothing the mind and refreshing the body, spiritual rejuvenation); (8) outdoor activities (i.e. boating, fishing, hiking, picnicking, camping and hunting, outdoor recreation and golfing) and (9) price and value (i.e. food, accommodation, good value for money, attractions and activities and good bargain shopping).

Destination Image Formation Agent

Latest guidelines for Tourism Marketing admit that the development of the image of a tourist destination is based on the consumer's rationality and emotionality

and as the result of the combination of two main components or dimensions (Baloglu & Brinberg, 1997; Lin, Morais, Kerstetter, & Hou, 2007). Two closely interrelated components: perceptive/cognitive image component and affective image component.

The cognitive image component consists of beliefs and knowledge about a destination, primarily focusing on tangible physical attributes. Affective image component referring to feelings and emotions raised by tourist destination. This emotional component is also strongly affected by the motivations of tourists (Asuncion Beerli & Martin, 2004). It is also important to note that the cognitive component of the image has a considerable impact on the affective component (Ryan & Cave, 2005). It is also a great influence by Beerli and Martin research that the socio-demographic characteristics of tourist also influence the cognitive and affective assessment of the overall image.

Therefore, the overall image of the destination is a combination of cognitive and affective components whereas the actual experience of having been on vacation at a tourist destination has an important effect on the destination image from a cognitive and emotional point of view (Asuncion Beerli & Martin, 2004). As the result of the cognitive process, the destination image is formed from several sources of information (reference groups, group membership, media, etc.). So it is proved that both between induced and organic components also cognitive and affective components are formed with some influence by external information.

The image of any destination arises from

many and diverse sources. Gunn noted on his research that a consumers destination image identified two components, there are induced and organic in the process of image formation which much depends on the external stimuli, which next called as image formation agents by Gartner in 1993 (Hughes & Allen, 2005). As seen above, the creation of destination images is based on different personal and stimulus factors by Baloglu and Brinberg (1997), but also on perceptual and more abstract factors such as consumers attributes and impressions of the place. These factors allow images to become either organic or induced.

Organic imaged formed by individuals themselves through past experiences with destinations and unbiased sources of information. Sources of organic images include news, reports, newspaper articles, movies, the internet, television, magazines, and personal sources, such as friends and family. Then Induced images created through information received from external sources, on the other hand, is formed through the influence of tourism promotions directed by marketers. This usually occurs when an individual begins sourcing information for a holiday. Sources of induced images include travel and tourism advertising, brochures, and travel agents (Rajesh, 2013).

Internet as Agent of Destination Image Formation

It is known that the Internet as a whole has many potential benefits for destination image as one of them as an information source (Hurley et al., 2013). Internet as one of the most recent sources of the induced component of destination image formation is meant to

communicate the marketing message to the destination and suppliers to a chosen travel audience.

As what Morgan and Pritchard (2000) in his book *Advertising in Tourism and Leisure* that “a country ‘cliché’ identity can be reshaped and given greater complexity through effective and consistent marketing.” Messages transmitted by the induced sources contribute to the formation of the induced component of destination images. Since Gartner (1994) argued “because of economic and time cost, vacation travel to a distant destination will usually be undertaken only after an extensive information search. In the absence of actual visitation, destination images are formed through induced agents.”

The development of the Internet and the World Wide Web (WWW) in the 1990s as a means for the global sharing of information has made a great contribution to social science. The Internet acts as a new communication and distribution channel for e-travelers and suppliers of travel services and products (Law, Leung, & Wong, 2004). The significance of the Internet as a commercial channel in the context of tourist information search and provision has been well recognized in previous studies (Bonn, Furr, & Susskind, 1999).

These studies suggest that it is virtually impossible for tourism organizations to overlook the Internet in their marketing mixes due to its advantages, which include global accessibility convenience in updating, real-time information service, interactive communications features and unique customization capabilities. The World Tourism Organization declared

that the key to Internet success lies in the swift identification of customer needs and the establishment on direct contact with consumers, offering them comprehensive, personalized and up-to-date information (Vich-i-Martorell, 2004).

Within the destination image literature, the importance of the internet as an image formation agent is increasingly recognized. Castaneda, Frías, and Rodríguez (2009) studied the influence of the internet on destination satisfaction and postulated a positive relationship between them. In which the antecedents of both actual acceptance and future use of the internet as a tourism information source. Govers and Go (2004) conducted a research that studies how destination identity is projected through the use of photographic imagery and narratives in an online environment in the context of marketing fast-growing tourist destination such as Dubai. Similarly, Choi, Lehto, and Morrison (2007) studied the destination image of Macau on the web by analyzing the online content of the DMO, blogs, magazines, guides and travel trade magazine's websites. The DMO was concerned with widening the travel appeal of Macau beyond the casinos but this concern was not shared equally by others.

The internet offers a great potential influence consumers perceived image, including creating virtual experiences of destination. According to the weeks survey more than two-thirds of travel and hospitality companies view the internet site as a significant competitive weapon within their industry and about 60 percent describe the internet as being substantial in acquiring the new customer (Pavlovic & Belullo, 2012).

Much past research conducted by the researchers and marketing practitioners, Chen, Chen, and Okumus (2013) study about the relationship between travel constraints and destination image of young travelers to Brunei. This study found a significant relationship between destination image and travel constraints during early decision-making process.

Social Media and Tourism

The analysis of social media can provide the tourism industry with business analytic results in the short term (real-time), medium and longer term horizons (Schmallegger & Carson, 2008). In this, it is essentially the modern form of 'word of mouth', a long established and important method of finding out and influencing decisions in the tourism and hospitality industry (Dellarocas, 2003). The utilization of this knowledge resource may lead to lower costs, better differentiation, more effective operational methods, and more powerful innovation in the industry. In addition, both comparative and differential advantages may be realized through the use of these methodologies. Current research indicates that social media analytics is a vital tool that must be used to innovate decision support in order to revolutionize the process landscape (Senecal & Nantel, 2004).

Research of social media and tourism has been conducted since a long time ago, the second generation of web-based services is characterized by having a consumer generated content (CGC), which allow people to share information. This research examines CGC on Trip Advisor, with a case study on the city of Lisbon. Along with a discussion on the radical changes

implied by new forms of collaboration and business models, it is explored how the users collaborate to image a destination. It is analyzed a sample of all the hotels in TripAdvisor.Com for the city of Lisbon (Miguéns et al., 2008). Well, Social media are gaining prominence as an element of destination marketing organization (DMO) marketing strategy at a time when public sector cuts in their funding are requiring them to seek greater value in the way marketing budgets are spent. Social media offers DMOs with a tool to reach a global audience with limited resources. The aim of this study is to explore the usage of social media among the DMOs of the top 10 most visited countries by international tourists. The study uses content analysis and semi-structured interviews to examine the usage and impact of social media marketing strategies and identifies a framework of best practice for other national tourism organizations (NTOs) to learn from (Hays et al., 2013).

Opinion Mining in Twitter

The power of social media as a marketing tool has been recognized and is being actively taken advantage of by people, governments, major corporations, and schools. Twitter is perhaps the most popular microblogging website where users create status messages called “tweets”, which are short status updates and musings from Twitter’s users that must be written in 140 characters or less. Tweets containing opinions are important because whenever people need to make a decision, they want to hear others’ opinions. The same is true for organizations. However, many real-life applications require very detailed analyses in order to gather information

from, for example, a product review, whose data could help users or managers make important product-related decisions. This approach is also being actively employed by governments or companies to collect and analyze feedback on their policies or products (Liang & Dai, 2013).

In particular, as a new communication medium, it has a profound impact on the social change by enabling users to communicate with the masses and acquaintances their opinions and thoughts. Social media data plays a significant role in an emerging Big Data arena. A variety of research areas such as social network analysis, opinion mining, and so on, therefore, have paid attention to discover meaningful information from vast amounts of data buried in social media. Social media has recently become main foci to the field of Information Retrieval and Text Mining because not only it produces massive unstructured textual data in real-time but also it serves as an influential channel for opinion leading (Bae, Son, & Song, 2013).

The remainder of this research is in line with the direction of this research which to investigate the public opinion on Twitter in several metropolitan cities around the globe regarding the destination image attributes towards those cities. We would like to know the patterns of the keywords that related to image and keyword using SAS text miner.

Method

Destination Image Attributes used as “Keywords”

The destination image researchers were used following attributes to measure the destination image. Performance of a

destination can be measured through the perception of destination travel attributes to tourists in order to facilitate market segmentation and promotion. Travel attributes are set of attributes that describe a place as a travel destination (Heung & Quf, 2000). Echtner and Ritchie (1993) concluded in their research that every destination has a combination of functional or tangible attributes and psychological or abstract attributes. The reason is that tourists generally have limited knowledge about a destination that they have not visited and they often

choose based on symbolic information acquired either from the media or from social groups (Armstrong *et al.*, 1997).

In this research we used destination image Attributes as a “keyword” that used for collecting data from Twitter, the keyword that has decided by the researcher is collected with full observation within research that was investigated from a decade ago. Here below shown the list and summarize table of the references for destination image attributes.

Table 1. Summarize the Source of References for Destination Image Attributes as “Keywords” Selection

	Journal Articles-Author	Total DA
Paper 1	1991, Charlotte M. Echtner and J.R. Brent Ritchie: The meaning and measurement of destination image.	36 Keywords
Paper 2	1999, Metin Kozak & Mike Rimmington: Measuring tourist destination competitiveness-conceptual considerations and empirical finding	24 Keywords
Paper 3	2000, Peter Murphy, Mark P. Pritchard, Brock Smith: The destination product and its impact on traveler perceptions	12 Keywords
Paper 4	2001, MARION JOPPE, et al.: Toronto's Image As a Destination-A Comparative Importance-Satisfaction	15 Keywords
Paper 5	2001, Joseph S. Chen Dogan Gursoy: An investigation of tourists' destination loyalty and preferences.	17 Keywords
Paper 6	2002, Sonmez, S. & Sriakaya, E: A distorted destination image? The case of Turkey.	28 Keywords
Paper 7	2002, Martina G. Gallarza & Hayde'e Caldero'n Garc'a: Destination Image-Towards A Conceptual Framework	20 Keywords
Paper 8	2004, Michael J.Enright, James Newton: Tourism destination competitiveness a quantitative approach	15 Keywords
Paper 9	2004, Asuncion Beerli & Josefa D. Martin: Factors Influencing Destination Image	80 Keywords
Paper 10	2005, Graham Hankinson: Destination brand images a business tourism perspective	23 Keywords
Paper 11	2008, Chi, C. G.Qing, & Qu, H.: Examining the structural relationships of destination image, tourist satisfaction and destination loyalty: An integrated approach.	33 items DI
Paper 12	2012, Girish Prayag & Chris Ryan: Antecedents of Tourists' Loyalty to Mauritius-The Role and Influence of Destination Image, Place Attachment, Personal Involvement, and Satisfaction	10 Keywords
Paper 13	2013, R Rajesh: Impact of Tourist Perceptions, Destination Image and Tourist Satisfaction on Destination Loyalty-A Conceptual Model	7 Keywords
Paper 14	2014, Jong-Hyeong Kim: The antecedents of memorable tourism experiences: The development of a scale to measure the destination attributes associated with memorable experiences	10 Keywords
Paper 15	2014, Neethiahnathan Ari Ragavan: Tourists perceptions of destination travel attributes: An application to International tourists to Kuala Lumpur	8 Keywords
Paper 16	2015, Shaked Gilboa, et al.: A summated rating scale for measuring city image	17 Keywords
Paper 17	2015, P. Ramseook-Munhurrana., V.N. Seebalucka., P. Naidooa: Examining the structural relationships of destination image, perceived value, tourist satisfaction and loyalty-case of Mauritius.	23 Keywords

After all the summarized references articles that was investigated from the researchers in the past ten years, there was collected from 42 journal articles from the latest 1970 until 2015 (full observation table described in the appendix part), observation was done with collecting all the destination image attributes that has suggested by all the researchers and tabulated into the table below. In this table, the observation of the destination image attributes counted only with Keyword items that suggested more in the previous research in terms of frequency. So, in this study, we decided to use the 5 keywords based on the

source of the references articles. All the tabulation could see on the appendix of this research for the full references.

The measurements of destination Image Attributes as a keyword then comes into the final decision, after the trial session that conducts to see the frequency of the raw data (further called as Tweets) that gathered from Twitter. The table below shows the 5 final keywords that used in this research there were, Culture or Cultural, Entertainment or Nightlife, Shopping, Festival, and the Food or Cuisine or Dining and the frequency of the Tweets on each month in the year of 2015.

Table 2. Final Keywords (After collecting Data in Twitter Advanced Search)

CITY	KEYWORD
LONDON and NEW YORK	“CULTURE” or “CULTURAL”
	“ENTERTAINMENT”
	“SHOPPING”
	“FESTIVAL”
	“FOOD”

Sample Selection

Figure 1 in the below concludes the Top 20 Global Destination based on the total number of the overnight International visitors. The MasterCard 2015 Global Destination Cities Index charts are described how 132 of the most important cities in the world are connected through air travel - how many international visitors arrive at each of these 132 cities from the other cities; and how much these visitors spend during their visit.¹ The Index is, therefore, a map of a key

human dimension of global connectivity. And over the five years since its launch in 2011, this map shows consistently great dynamism and growth in air travel between these 132 cities, driven by total visiting number, improving infrastructure, rising discretionary spending power (especially in the expanding middle class in emerging markets), and the seemingly unquenchable thirst of an ever-increasing number of people from all walks of life to visit the world (MasterCard 2015 Global Destination Cities Index).

2015 rank (2014 rank)	Desetination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor (millions)
			1(1)	2012	2013	2014	2015	% Δ 2014&2015	
1(1)	London	United Kingdom	15.29	15.46	16.78	17.75	18.82	6.0%	\$20.2
2(2)	Bangkok	Thailand	13.80	15.82	17.47	16.89	18.24	8.0%	12.4
3(3)	Paris	France	14.02	14.29	15.52	15.56	16.06	3.2%	16.6
4(4)	Dubai	UAE	9.91	10.94	12.18	13.20	14.26	8.0%	11.7
5(7)	Islanbul	Turkey	7.51	8.82	9.81	11.27	12.56	11.4%	9.4
6(5)	New York	USA	10.26	10.59	11.07	11.86	12.27	3.5%	17.4
7(6)	Singapore	Singapore	10.39	11.10	11.90	11.53	11.88	3.0%	14.7
8(8)	Kuala Lumpur	Malasyia	9.48	9.63	9.89	10.53	11.12	5.6%	12.0
9(9)	Seoul	South Korea	6.56	7.51	8.03	9.04	10.35	5.2%	15.2
10(10)	Hong Kong	Hong Kong (SAR) China	8.43	8.31	8.26	8.37	8.66	3.5%	7.4
11(11)	Tokyo	Japan	3.26	4.89	5.40	7.68	8.08	5.1%	8.4
12(12)	Barcelona	Spain	6.89	6.91	7.18	7.42	7.63	2.9%	13.9
13(13)	Amsterdam	Netherlands	6.06	6.10	6.65	7.29	7.44	2.1%	3.7
14(14)	Rome	Italy	6.66	6.73	7.04	7.05	7.41	5.0%	5.3
15(15)	Milan	Italy	6.59	6.88	6.99	7.01	7.17	2.3%	4.9
16(16)	Taipei	Chinese Taipei	3.96	4.70	5.83	6.38	6.55	2.5%	9.3
17(17)	Shanghai	China	6.18	6.04	5.71	5.68	5.85	3.0%	5.1
18(18)	Vienna	Austria	5.08	5.38	5.55	5.66	5.81	2.6%	4.6
19(19)	Prague	Czech Republic	4.36	4.92	5.05	5.23	5.47	4.5%	3.3
20(20)	Los Angeles	USA	4.45	4.48	4.60	4.94	5.20	5.3%	7.4

Figure 1. Global Top 20 Destination Cities by International Overnight Visitor (2015)

Based on the study that has done by MasterCard in 2015, finally we conclude to choose top 2 destinations based on the total number of visitors, they are London and New York. Why we exclude Singapore, Paris, Dubai, Bangkok, and Istanbul as tin Master Card Global Destination Cities Index because the other five cities had the low rate of Twitter penetration that for overall raw data of tweet that retrieved from the Twitter Search Index is less than the standard that already pointed out before.

Text Mining Process

Text mining can be used in descriptive and predictive mining: descriptive

mining includes discovering the subjects and concepts that exist in the textual collection. Otherwise, predictive mining includes categorizing the documents and using the information that is implicit in the text for decision making (SAS Institute Inc., 2014). This study used descriptive mining approach to examine the destination image attributes related to twitter text mining in five global destination cities and applied SAS Text Miner to analyzed unstructured text content on Twitter.

Data Pre-Processing

Data pre-processing is a fundamental task in the process of Knowledge

Discovery. When working with short texts, data pre-processing is even more relevant since data tend to be more inconsistent and noisy. Firstly, tweets collected from online social networks are unstructured texts written by people and might contain misspellings and slang language. Another aspect that influences the poor quality of the data is the limit of characters allowed in each message (no more than 140 in the case of tweets). Since users should limit the idea they want to communicate to 140 characters, they frequently use abbreviations and

unconventional language called Internet slang. The preprocessing techniques evaluated in this study are:

1. Removing stop words and symbols (>, =, !, \$, etc.)
2. Removing links to other websites
3. Removing references to other users on Twitter (words starting with @)
4. Removing hashtags (words starting with #)
5. Removing verb word
6. Merged the word and treat as synonyms
7. Spelling correction

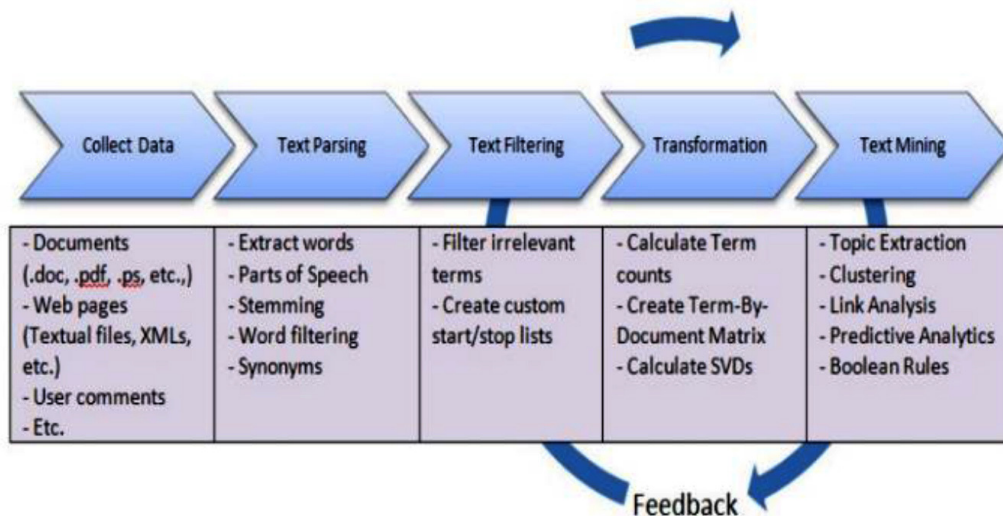


Figure 2. Steps of Text Mining

The main process for the text mining in this study included three steps. To start with the researchers transformed the raw data into the usable format, and then imported the data into SAS Text Miner. Besides, the study used Text Parsing and Text Filter Node to extract and explore key concepts. Finally, the concept links were generated by the program and helped the researchers to interpret results.

Results Findings

The study separately explored and discussed two main findings firstly discussed the trends based on the Twitter Statistics of destination image attributes as a keyword in 3 Global Destination Cities. Second, In addition, this study also discussed the key public opinion towards destination image about the top list destination in overall 2015. The text mining will demonstrate the

representative tweets of the relevant terms in second tiers of concept link approach.

London

London is the capital and most populous city of England, Great Britain, and the United Kingdom. Standing on the River Thames in the southeastern part of the island of Great Britain, London has been a major settlement for two millennia. London is a leading global city, with strengths in the arts, commerce, education, entertainment, fashion, finance, healthcare, media, professional services, research and development, tourism, and transport all contributing to

its prominence. It is one of the world's leading financial centers and has the fifth-or sixth-largest metropolitan area GDP in the world depending on measurement. London has a diverse range of peoples and cultures, and more than 300 languages are spoken within Greater London (Wikipedia, 2016).

Trend based on the Twitter Statistics regarding the public opinion towards destination image in the city of London. Here below the description of the statistics frequency chart in overall 12 months in the year of 2015. The statistics regarding 5 keywords based on the attributes of the destination image.

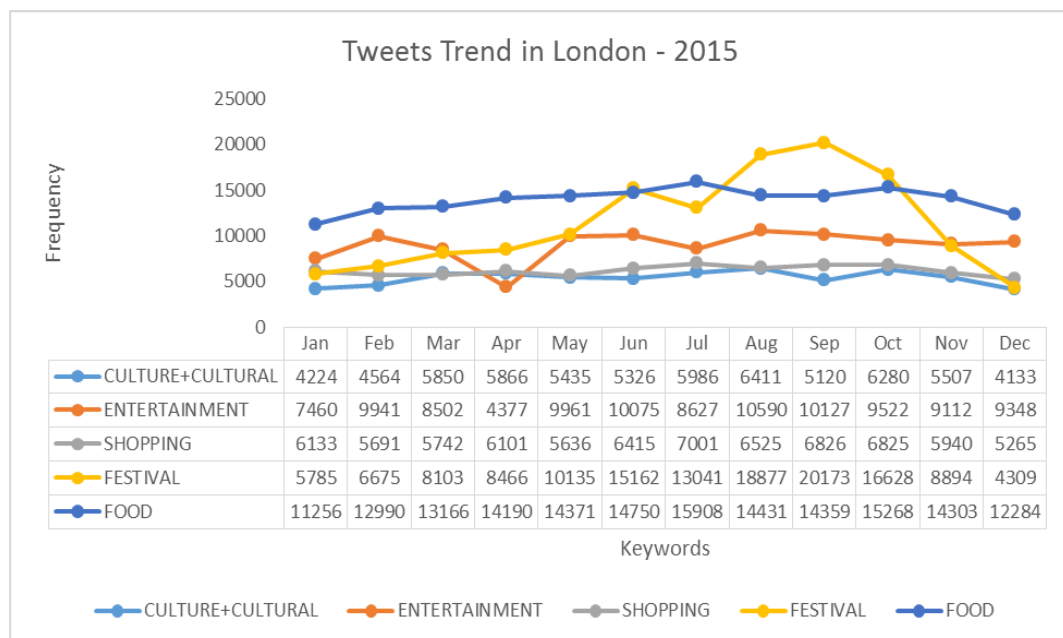


Figure 3. Tweet Trend in London

From the line chart above we could describe that every single keyword had their own pattern, mostly in each month in 2015 the trend is going up and down. The most interesting is that in the month of June, July, and August that the trend is growing up, we could believe that in this month's there is significant information behind that month, typically four-season countries in Europe there are a festive holiday in a year in that month I could believe is the beginning of summer holiday season which tends of twitter used statistics growing. This pattern is also documented itself from the analysis that conduct by Borruto in 2015, he stated resulting curve describes a particular trend. Indeed, it presents some peaks in correspondence to summer months (i.e., June, July, and August). Hence, we can argue that these months are those of major Twitter users' activity. These increased frequencies of tweets publishing can be due to different factors, for instance, more free time or a higher number of advertising campaigns.

New York

The City of New York often called New York City or simply New York, is the most populous city in the United States. Located at the southern tip of the State of New York, the city is the center of the New York metropolitan area, one of the most populous urban agglomerations in the world. A global power city, New York City exerts a significant impact upon commerce, finance, media, art, fashion, research, technology, education, and entertainment. Home to

the headquarters of the United Nations, New York is an important center for international diplomacy and has been described as the cultural and financial capital of the world.

Many districts and landmarks in New York City have become well known, and the city received a record of nearly 60 million tourists in 2015, hosting three of the world's ten most visited tourist attractions in 2013. Several sources have ranked New York the most photographed city in the world. Times Square, iconic as the world's "heart" and its "Crossroads", is the brightly illuminated hub of the Broadway Theater District, one of the world's busiest pedestrian intersections, and a major center of the world's entertainment industry. The names of many of the city's bridges, skyscrapers, and parks are known around the world. Anchored by Wall Street in the Financial District of Lower Manhattan, New York City has been called both the most economically powerful city and the leading financial center of the world. New York City's higher education network comprises over 120 colleges and universities, including Columbia University, New York University, and Rockefeller University, which have been ranked among the top 35 in the world.

Trend based on the Twitter Statistics regarding the public opinion towards destination image in the city of New York. Here below the description of the statistics frequency chart in overall 12 months in the year of 2015. The statistics regarding 5 keywords based on the attributes of the destination image.

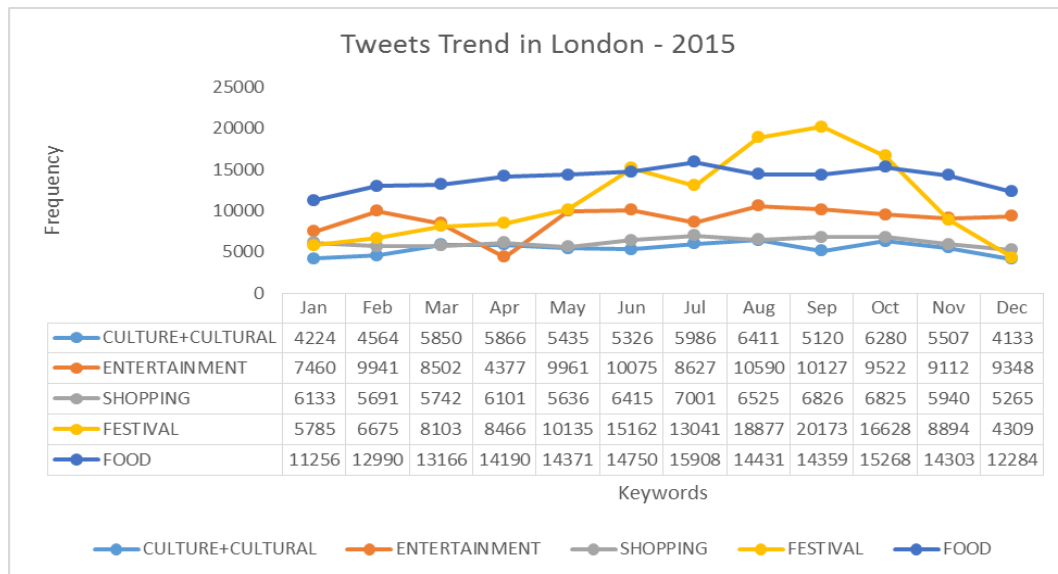


Figure 4. Tweets Trend in New York

Among the social networks, Twitter, with its 310 million monthly active users in 2015 (Statista, 2015), is one of the most important generator of data stream thanks to the widely-used Tweets, 140-character messages posted by users to express their opinion on a topic, a situation, a news, and so on. The more opportunities to gain information from the trend is what we try to do in this research with finding the relevant terms by the public opinion on Twitter.

The line chart above describes the trend twitter statistics of New York City, like another city that we could define all the up and down fluctuation in the chart. For the Festival keyword, the trend describes that most significant twitter used is in August. The possibilities the top festival month that happened in that month, either with another keyword, mostly the trend statistics show that in summer holiday time the most significant twitter used. We can conclude that these months are those of major Twitter users' activity. This month is the peak when the Twitter

user is tweeting, the increased frequency of tweet could possibly affect by many factors. The more you have free time or event, planning, or holiday in summer, people who act in twitter tend to tweet twice more active than the usual days.

The important of tourism industry and its impact in marketing studies especially about destination images, then turn into the role of Twitter as the medium of social medianetworking as one of the trustworthy information resource based on the public opinion, follows up with the study by MasterCard and decided to choose the top 2 list of global destination cities as the object of this research and finally the last used text mining as the methodology in analyze the relation between each variable component. Overall this study illustrated of understanding the relation between destination images attributes used keywords towards a particular destination. This study adopted various approaches of social media mining to investigate public opinions through the tweets on Twitter. The findings provide

some preliminary but informative implications.

in both cities destination either London or New York have a key same point.

Start with the similarity keyword Term “Culture and “Cultural, the relevant term

Table 3. The Similarity Terms that Found in both Destination Cities

The Similarity Terms that Found in both Destination Cities	
Keyword “Culture” and “Cultural”	Multi-Culture, Art, Music, and Cultural Centre
Keyword “Entertainment”	Nightlife, Award Show & Film Premier
Keyword” Festival”	Comedy Festival, Film, and Music Festival
Keyword “Food”	Market, Restaurant, Food Festival
Keyword “Shopping”	Fashion, Center, and, Fashion Week

In another side after the similarity term that found in both findings in two cities, now we conclude the unique terms that

relevant represent London and New York as destination Cities. Below the table that conclude all the terms

Table 4. The Unique Terms that Relevant Represent both Destination Cities

The Unique Terms that Relevant Represent both Destination Cities		
Keyword	London	New York
Keyword “Culture” and “Cultural”	British Culture	Black (African-American)
Keyword “Entertainment”	James Bond	Broadway
Keyword” Festival”	Lumiere Festival	Global Citizen Festival
Keyword “Food”	British Traditional Food	Food Truck
Keyword “Shopping”	Etsy	Kate Spade

Managerial Implications

Several prominent implications can be derived from the findings of this research. From the stakeholders of tourism industries perspective, the marketers are in-charge in building the destination image both tourism organization or personal. This could possibly add the variety of research in the tourism field. In short, destination image is one of the most important elements of the tourist

destination and infers a critical factor for the success rate of tourism management. For this reason, the image of a destination should be analyzed using a Research, Development and Innovation strategy. The stakeholder of tourism industries, including service provider, destination authority, customer, may benefit the managerial implications. Below are several managerial implications for Services Providers and Authority Tourism Organization:

1. Service providers get the better understanding of public opinion of where they could get a better information through the public opinion, meaningful facts, and source of images which portray the real condition.
2. The future strategic decision by service providers based on meaningful facts and valuable information based on the trivial situation. This strategic decision could help them to anticipate future obstacles.
3. Evaluation system based on their services product will provide the fact from the customer to services providers. This can give additional values to customer experiences, and the further important decision to attract potential tourists or visitors who use social media as their information source.
4. Opportunities to get the partnership with local and international services provider to attract more valuable customer and to add a better networking business environment.

The same amount of responsibility is also in the hand of tourism organization authority. They could give a specific contribution to gain national destination goals for their tourism product. Here are several implications that can be considered in the future decision policy:

1. Plan of a new strategic approach regarding re-branding the image of Tourism Destination. The highest authority could build a new management plan to set a specific goal for all stakeholders and try to efficiently coordinate and allocate the task in a group work. This would build a specific group work that handles all the technologies and digitalizes all the work share valuable information to the potential visitor.
2. The tourism organization, as the key person to create, design, and planning the destination image in front of the tourist, should add values to their strategy, maximize the potential resource from the destination and try to combine with the technology; attempt to create events or tourism performances, not only to give impact for the economic side but also to the customer itself; invites customer to participate in the process of planning and running the events.
3. Understanding the public opinion about the image of destination gives the tourism organization and tourism stakeholders to evaluate their destination performance. The evaluation is needed to get across and balance between the service provider and the customer. After going through these processes, the tourism organization could further plan another long and short term policy that may increase the number of tourists.
4. By using data mining of social media, the personal connection between tourists and service providers are built. They can generate the expectation of the customers, and they will know if their opinion is leading to more constructive suggestion and creating ideas. And one more important things that should note for Tourism organization, they must address a full spectrum of consideration for developing and implementing a new

media marketing strategy to gain what's going on customer opinion of their latest policy.

Limitation and Future Research

Beside the current study, the finding result still needs to be interpreted in light of its limitations. The limitation of this research is the minimum of objects sample (two cities) and the short period of data collection (one year). This study also could not apply the sentiment analysis, where this analysis to determine whether a "social media thought" is positive, negative or neutral. Furthermore, it could also discover how people feel about a particular topic.

For future aim, this research can be replicated with the investigation with more destination cities, i.e. not only just with two objects of destination but also can comparing with more than 5 destination cities. Another further research can also widen the topic or even focus on specific attributes topics, for example focusing on food destination as the image of choosing travel decision. In this area, research may focus on comparing few sample of destination that is famous and concern with the tradition of cuisine. Another variable that uses the food icon or food identity from a particular country as an image of the destination.

The suggestion that could be considered is the use of another social media as the sample selection, such as YouTube, Instagram, and Facebook. This kind of social media can use in supporting the analytics using social media mining. The alternative approach in analyzing

social media mining other than Statistics Analytics may also be an option. Sentiment analysis may provide the alternative outcome of the data. Final optional analyzes could be different mining approaches and comparison.

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