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IDENTIFYING AMERICAN TOURISTS' UNIQUE EXPERIENCES FROM THE LINCOLN MEMORIAL

Elena A. Smolianina ¹, Irina S. Morozova ², Nina V. Kharitonova ³

- 1, 2, National Research University Higher School of Economics, Perm, Russia
- ³ Perm State University, Perm, Russia
- ¹ easmolianina@hse.ru, Scopus ID: 57196357987, ResearcherID: L-6180-2015, SPIN-код: 7841-7810
- ² imorozova@hse.ru, Scopus ID: 57196357320, ResearcherID: B-9109-2016, SPIN-код: 3987-5080
- ³ kharitonovaninaviktorovna@mail.ru, SPIN-код: 6448-7203

Abstract. Detailed experiences of travelers are presented in online tourist reviews that affect the way other tourists perceive and plan their trips. Such reviews are sources of information in the form of open writing that allows reliable sharing of experience about tourist attractions. Previous studies have made use of tourist reviews to obtain lists of the most well-known tourist destinations and their attributes or to evaluate service in the hospitality industry. This study looks at tourist reviews from a new perspective and identifies unique tourism experiences using a combination of algebraic modeling and sentiment analysis applied to reviews about the Lincoln Memorial. Our research findings reveal that they are based on neutral and negative assessments of the trips and refer to intangible items. Overall, unique tourism experiences can give useful advice on how to make a trip to the memorial comfortable and enjoyable. Additionally, they could provide travel managers with reliable information about the attraction for effective marketing campaigns.

Keywords: unique tourism experiences, online tourist reviews, Lincoln Memorial, vector model, sentiment analysis

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РЕКРЕАЦИОННАЯ ГЕОГРАФИЯ И ТУРИЗМ

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ВЫЯВЛЕНИЕ УНИКАЛЬНЫХ ВПЕЧАТЛЕНИЙ АМЕРИКАНСКИХ ТУРИСТОВ О МЕМОРИАЛЕ ЛИНКОЛЬНУ

Елена Анатольевна Смольянина¹, Ирина Сергеевна Морозова², Нина Викторовна Харитонова³

- 1, 2. Национальный исследовательский университет «Высшая школа экономики» Пермь, г. Пермь, Россия
- ³ Пермский государственный национальный исследовательский университет, г. Пермь, Россия
- ¹ easmolianina@hse.ru, Scopus ID: 57196357987, ResearcherID: L-6180-2015, SPIN-код: 7841-7810
- ² imorozova@hse.ru, Scopus ID: 57196357320, ResearcherID: B-9109-2016, SPIN-код: 3987-5080
- ³ kharitonovaninaviktorovna@mail.ru, SPIN-код: 6448-7203

Аннотация. Путешественники делятся своими впечатлениями в онлайн-отзывах на туристических сайтах, определяя восприятие и планирование поездок других туристов. Туристические онлайн-отзывы являются надежными источниками предоставления информации в свободной форме, позволяющей делиться искренними впечатлениями о достопримечательностях. Существующие работы анализируют туристические отзывы с целью составления списка самых популярных достопримечательностей и их отличительных черт, а также для оценки уровня сервиса в индустрии гостеприимства. Данное исследование посвящено новому подходу к туристическим онлайн-отзывам как источнику уникальных впечатлений туристов на основе комбинации методов алгебраического моделирования и анализа тональности слов на примере анализа туристических онлайн отзывов о мемориале Линкольну. Результаты анализа позволяют сделать вывод о том, что уникальные впечатления о мемориале Линкольну носят нейтральный и негативный характер и охватывают нематериальную сферу туризма. Уникальные впечатления туристов в форме онлайн-отзывов содержат полезные советы о том, как сделать поездку к мемориалу комфортной и интересной. Они также предоставляют тревел-менеджерам достоверную информацию о достопримечательностях, что позволяет им проводить эффективные маркетинговые кампании.

Ключевые слова: уникальные впечатления туристов, туристические онлайн отзывы, мемориал Линкольну, векторная модель, анализ тональности



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Introduction

Tourist attractions are core components of tourism systems that significantly influence a destination success, tourist satisfaction, and the quality of experiences. The tourist attraction is a comprehensive concept that covers both tangible and intangible aspects of tourism. The latter determine the tourists' desire to come back in reality or memories and experience the uniqueness of being in a particular place. Uniqueness is the focus of visitors' attention that shapes their perception of the destination and attracts public funding for its restoration and conservation [1]. While visiting attractions, tourists gain experiences forming their emotional and mental representations of the attraction, discourse, and behavior. Tourism experiences are sets of memories and emotions related to the places visited. There are various typologies of tourism experiences. The most profoundly studied are existential authentic experiences, defined as selfidentity affirmation based on involvement in tourism activities [39]. These are opposed to ordinary experiences, creative experiences based on tourists' creation of unique pieces of work of their own [25], and memorable experiences as individual assessments of the experience based on hedonism, refreshment, novelty, meaningfulness, local culture [11] as well as on surprise and tour guide performance [6]. As is seen from the above, researchers of tourism experiences outline their special, unique features but do not use the term 'uniqueness'. In this paper we propose the concept of unique tourism experiences and define them as the ones of their kind that differ from the tourist's previous experiences or from other tourists' experiences since the focus of tourist attention has shifted away from cultural objects and inflected inward toward the self, created through travel practices [25].

In addition, most of the literature on tourism experiences applies scale methods and a quantitative approach. More specifically, tourists' attitudes are directly measured with the help of questionnaires where travelers are asked to agree or disagree with particular statements. For example, to measure memorable tourism experiences two scales are used. The first one is TALE (Thinking About Life Experiences) [2], and the second is TAMS (Tourism Autobiographical Memory Scale) [8]. Respondents choose one answer (for instance, strongly disagree, disagree, undecided, agree, or strongly agree) to the survey question that reflects their personal attitude to the attraction. Scales can measure such variations as frequency, quality, importance, and likelihood, depending on the aim of a tourism study. However, today there are emerging more and more quantitative approaches involving data mining and data processing, because most information is presented by users on online platforms. Data mining and processing methods allow dealing with large amounts of data and turn them into useful knowledge, as it is the case with the high volume of tourist reviews shared on travel websites. Methodologies based on content analysis involving large data sets were applied to identify tourism experiences in online reviews about natural sites in a few studies but they used manual content analysis. There is still a lack of studies dealing with content analysis based on data mining and processing techniques as data mining is extremely underutilized in tourism research. There is also a lack of studies devoted to American tourists' perception of US attractions, particularly US memorials. Yet, this has become especially acute after the outbreak of the COVID-19 pandemic, which triggered a boom in domestic tourism, reshaping the tourism sector in many countries of the world. Thus, this research is up to date as it develops a quantitative methodology based on text- and emotion-mining techniques to identify unique tourism experiences of American travelers while visiting the Lincoln Memorial.

Hence, we propose the following *research question:* Is it possible to obtain unique tourism experiences using online reviews?

Unique tourism experiences about an attraction refer to the tourist's ideas that are the ones of their kind and by that are different from other tourists' experiences about the same attraction. Despite being few in number, they help other visitors make a trip to the attraction comfortable, safe, and enjoyable. They determine the tourists' intention to visit the attraction in the future or recommend it to other travelers. We assume that two factors are crucial for a unique tourism experience to occur. The first one is strong

influence of new personal experience in various forms: feelings, emotions, atmosphere, details, etc., triggered by a particular place, on a tourist. The second one is intention, resulting from the influence, to help other travelers to improve their trip to the place. We infer that a combination of these two factors has an impact on a feeling of unity with the tourist community and determines tourists' desire to have a unique experience at the destination again. In online tourist reviews about the attraction, unique tourism experiences may be presented by infrequently used words expressing either positive or negative emotions and providing insights into personal perceptions of the attraction. Therefore, it is expected that unique tourism experiences, extracted from tourists' reviews based on the frequency of words, are trustworthy guidelines providing visitors and travel managers with reliable specific information that can enrich travel experience and help plan the trip properly.

Therefore, our research hypothesis is as follows: unique tourism experiences are represented by the most infrequent words in online reviews. We assume that shared unique experiences, either positive or negative, inspire other tourists to visit the attraction or destination with a feeling of admiration and/or caution. Tourists share their unique tourism experiences in online reviews on travel websites that provide other visitors with useful information on tourists' preferences and trip planning. Travel websites are special forms of electronic word of mouth (eWOM) used to present information effectively and influence the tourism sector due to the intangible nature of tourism services. In spite of the fact that online tourist reviews have been under consideration for many years, tourism marketing planners and agencies still do not use data from reviews about tourism experiences in their reports and marketing campaigns. They traditionally refer to descriptive statistics on online booking rates, the presence on the web of the hotel and tourist facilities, and the use of social networks by website visitors [35]. As for tourism experiences shared online, although being a valuable source of information, they are almost exclusively addressed in academic research. They are primarily studied with the use of unstructured methodologies that rely on unstructured methods such as in-depth interviews [36], photo-elicitation interviews [40], and narrative research and interpretation [29]. These techniques allow respondents to describe their impressions of attractions and destinations in their own words. The main advantage of these techniques is that tourists have a choice of their own idiosyncratic target destination, but could prompt a bias toward the recollections of particular kinds of experiences. Tourism experiences are also analyzed with the use of structured methodology, which is presented by the scale method [11]: respondents rate their experiences according to the 7-point Likert-type scale and then the tourists' perceptions are derived from these ratings. However, the structured technique has a limitation that makes respondents deal with the attributes that do not directly reflect their perceptions of the destination or attraction since experiences are highly personal, subjectively perceived, intangible, ever-fleeting, and continuously on-going. Researchers also use a mixed methodology that combines structured and unstructured techniques to identify and describe tourists' best and worst experiences and to survey data on attribution theory [18]. A combination of techniques is quite effective as it integrates artificial and human intelligence and broadens opportunities for analysis and synthesis for the benefit of all tourism industry actors. Since tourists post millions of reviews on travel websites and social media, they provide researchers and travel organizers with data that require modern unstructured techniques. One of the challenges of such techniques is extracting information from thousands of online tourist reviews and processing it in accordance with a particular aim. Modern text analysis techniques automatically extract and analyze documents without the limitation of manually reading, understanding, annotating, and interpreting pieces of shared data. The concept of uniqueness in tourism was addressed in one study using unstructured techniques [35], but it focused on unique attributes of destinations rather than on unique tourism experiences as in our study. Moreover, the combination of vectorization and sentiment analysis has not been applied to unique tourism experiences. Consequently, this article contributes to unique tourism experiences studies on the basis of unstructured techniques applied to online tourist reviews. Unique tourism experiences refer to individual facts mentioned by the least number of tourists and are significantly different from the rest of the facts mentioned by other tourists, so they constitute the

periphery of the visitors' perceptions of the attraction. The identification of such unique tourism experiences can help marketing planners to select relevant emotional and practical information for effective marketing campaigns because it makes a planned trip comfortable and enjoyable. In addition, individual facts provide tourism agencies with trustworthy information about a real trip to the attraction.

The rest of the paper is structured as follows: the next section briefly reviews the literature in the field of content analysis applied to online tourist reviews and the identification of unique tourism experiences from the visitors' perceptions; the third section describes the research design, including data collection and proposed methodology; the fourth section analyzes the findings and discusses their meaning, the fifth section presents research contribution, implications, limitations and future research; the final section offers conclusions.

Literature Review

In recent years, numerous research studies have emphasized the significance of the Internet in the tourism industry. Networking platforms and websites allow tourists to interact and share their views and experiences with virtual communities. They provide visitors with updated information, virtual communication as well as situated cognition. Online tourist reviews are sources of information that determine empowerment of the trip community, differentiation of positive and negative experiences, and visitors' destination choice. Consequently, the content of online reviews can present various ways tourists perceive attractions and destinations.

So far, tourists' perceptions have been analyzed using in-depth interviews and narrative studies. Apart from that, there has been considerable research focus on surveys and questionnaires dealing with open-ended questions to identify tourists' perceptions of attractions. There is obviously a lack of research on tourist perceptions in online travel reviews, especially that using text mining techniques [35]. Moreover, no studies have combined text mining and sentiment analysis techniques for extracting information about tourism experiences described in online reviews.

A number of research studies have used a content analysis and sentiment analysis of tourists' perceptions of hotels, restaurants, destinations, etc. [3; 14;16]. In the field of tourist attractions, Kirilenko, Stepchenkova, Hernandez [13] used network analysis, spatial analysis, and geo-visualizations of data from online reviews of Floridians, out-of-state US visitors, and international travelers about Florida's attractions to identify clusters of visitors' interests. Taecharungroj, Mathayomchan [34] analyzed online reviews applying latent Dirichlet allocation and naïve Bayes modeling in order to determine the dimensions of tourist attractions such as beaches, islands, temples, a pedestrian street, and markets in Phuket. Capriello et al. [5] and Cong et al. [7] focused on farm and wildlife tourism experiences in online reviews. These studies mostly used manual content analysis techniques. Content analysis based on data mining techniques has not been widely applied to tourism experiences yet. Content analysis based on data mining techniques can help to extract useful knowledge from online reviews as it deals with corpora using frequency of textual data and other important characteristics [35].

Tourism experiences are multifaceted and complex phenomena that are quite difficult to describe and measure since they are subjective and there are many kinds of them. Tourism experiences have been the focus of research for many decades. They have been studied as special or unique perceptions, but the term 'unique tourism experience' has not been conceptualized.

Tourism experiences were initially considered as states of mind caused by either pseudo-events [4] or real authenticity tourists searched for [17]. Authentic tourism experiences were widely studied in the 1980s-1990s and were defined as perceptions that have elements of spontaneity, worth, and genuineness. J. Urry clearly delineated authentic tourism experiences from routine ones by extraordinariness of tourist perception [37].

Being determined by the individual's cognitions and feelings, tourist experiences influence the tourist's behavior in terms of motivation and satisfaction. In tourism experiences, motivation is pre-

sented by knowledge seeking, social interaction, and the desire to escape responsibilities, while satisfaction is formed due to the pace of a tour, cleanliness, and comfort. Tourist experiences are also shaped by awareness and familiarity with the destination as they include the image of a destination as a sum total of the images of the individual elements that make up the tourism experience. Tourists' narratives showed that visitors are more likely to visit the destination if they have familiarized themselves with it before [20].

There is a tight connection between tourism experiences, particularly unique ones, and self-change. Investigating backpackers' perceptions of trips, C. Noy found out that their profound out-of-the-ordinary experiences formed a basis for personal change. The backpackers reported to acquire tolerance, maturity, and patience after the trip, which was manifested in the use of such words as 'real', 'original', 'pure', etc. in their narratives about experiences of adventure and authenticity [21]. According to C. Noy, 'the uniqueness of the experience <...> is founded on the uniqueness of the destinations' [21, p. 92]. Unique experiences are co-created by the visitor and tourism industry stakeholders (intermediaries, locals, political bodies, Internet sites, etc.).

The origins of the concept of unique tourism experiences can be traced back to the 1960-80s typologies that classified tourists' experiences based on the concepts of tourism and the tourist. In the 2000s, typologies focused on psychological processes and the existence of experience plurality owing to transition of a tourist from one type of experience to another during one trip. N. Uriely put emphasis on tourist experience as a diverse phenomenon since tourists who travel in a similar form do not share the same experiences [38]. Tourists feel and notice those things that usually go unnoticed and unfelt in non-tourist activities, and they remember these things since experiencing something different leads to a strong memory of the travel experience.

Memorable tourism experiences (MTE) were conceptualized in the 2000s and are widely studied today. Researchers analyze factors of MTE, their stages, senses they evoke and their impact on the tourist. Initially, seven key MTE factors were identified: hedonism, involvement, novelty, local culture, refreshment, knowledge, and meaningfulness [11]. Further, yearning to visit a destination and high involvement, contact with the local culture, social connections, and human interactions were added. The destination also tailors MTE due to its infrastructure, accessibility, local culture/history, physiography, activities and events, environment management, quality of services, hospitality, place attachment, and superstructures.

MTE have central components that change at sequential travel stages: before, during, and after the trip. It is usually after the trip that tourists have the most recalled memories as 'unique and unexpected travel experiences allow their current experiences to be differentiated from other previous experiences' [23]. They are often connected with a sense of well-being in case people experience 'thrills, enjoyment, excitement (hedonism), something meaningful or important, and learn about themselves (meaningfulness) while at the destination' [31, p. 16]. Thus, MTE tend to considerably affect social functioning since visitors deliver information and recommendations, improve self-identity and self-continuity as well as cognitive functioning, and make a timely decision about the destination to choose in the future. Thus, MTE studies play a big role in the tourism and hospitality industry providing destination managers with important marketing tools.

Along with memorable tourist experiences, there is a new line of research devoted to tourists' emotional experiences [24], though such studies are very few in number. Emotional tourists' experiences form a multicomponent process involving various emotions with anticipation and trust as major contributors to tourism experiences.

Culinary, extraordinary food, medical, recovery, deafblind, and ancestral tourism experiences have also become of particular research interest in recent years. Culinary tourism experiences are created by a single element such as food, a restaurant, or a view. Interestingly, neither local cuisine nor a memorable destination is required for this type of experience as 'the most memorable food (culinary) travel experiences are generally unique to a single moment in time' [33, p. 1129]. The

researchers emphasize that the only limitation to memorable food experiences, created by a single element such as a food, a restaurant, or a view, is that "they must happen away from home on a vacation or trip" [33, p. 1130]. Having studied travelers' extraordinary food experiences, the investigators inferred that such experiential attributes of travel as companions, guest service, or the view were also the most memorable traits of the experience [33]. Furthermore, tourists with a high level of cultural capital are more likely to be surprised by the simplicity or complexity of their experience, while tourists with a low level of cultural capital are more often impressed by the genuineness of the experience.

Another line of research in tourism experiences is medical tourism perceptions that reveal medical tourists' experiential reactions about services related to medical care and tourism at specific medical destinations [9, p. 1291]. Medical tourism experiences are described by seven dimensions, including treatment quality, medical service quality, medical tourism expense, medical tourism infrastructure, destination appeal, destination culture, and ease of access [9, p. 1298]. These dimensions turn medical tourism experiences into tourism recovery experiences that are stress relievers, especially for employees, since relaxation, detachment from work, experiencing mastery and personal control have positive effects on life satisfaction even on short trips.

A narrow focus is also made on deafblind travel experiences based on developed communication and easy access to information, use of crossing indicators and street furniture, orientation and mobility training as well as specially equipped public transport [26]. A new research area is the study of ancestral tourism experiences formed as a result of visiting ancestors' places. These experiences are highly personalized, deeply emotional, and time-consuming in terms of work with archives, as well as uniquely challenging since tourists contribute to the co-creation of the local heritage.

The analyzed studies have provided valuable insights into enhancing the theoretical framework pertaining to unique tourism experiences. These are a relatively new concept, embracing tourists' strong impressions different from other ones and thus determining visitors' choice to share their experiences with the tourist community. The concept of uniqueness was mainly studied in mathematics as the property of being the one. It was then extrapolated to marketing studies, where it is suggested that the customer seeks unique brands and avoids those similar to others as they cause dissatisfaction. Thus, being 'a great sense of distinctiveness from others', uniqueness implies focus on the self.

In tourism, uniqueness was studied in terms of travelers' luxury restaurant experiences and the experience of difference, foreignness, and disorientation in destinations. The idea of uniqueness was also analyzed in studies devoted to destination image, most of which identified unique characteristics by using pictures and texts from online sources as well as text-mining techniques [35]. It was pointed out that apart from common characteristics shared by many destinations, each destination has unique ones that distinguish it from others. Unique characteristics refer to both tangible and intangible attributes. The latter are related to the experience at the destination and are 'outside the control of destination marketers' [35] because the personality of the tourist contributes greatly to the formation of the destination's uniqueness. Focusing on the literature on uniqueness, it is necessary to emphasize that this concept relies on difference in perception of the tourist attraction or destination. And this difference can be identified by comparison of tourism experiences. Such an approach allows travelers to go beyond typical ways of destination and attraction perception and provides first-hand experience about the atmosphere, people, and local environment.

Text mining is used to extract specific information from large-scale text sets. Text mining techniques are characterized by high speed, validity, and application to different kinds of text. This is crucial for online text mining, which deals with a large number of online reviews about tourism sites, hotels, and services.

Text mining methods are classified into four types: context-based, semantic-based, sentiment analysis-based, and content-based. They mostly rely on the extraction of terms (words) and calculation of their frequency. It is traditionally done by the numerical statistic technique of the TF-IDF (term frequency – inverse document frequency), which scales down the impact of terms that occur

very frequently in the corpus but are less informative than terms occurring in a small fraction of the corpus. Machine learning techniques use the term 'frequencies' to evaluate text data in accordance with the purpose of the research.

As for tourism experiences, three main methodologies are effectively used for their analysis [35]: sentiment analysis, content analysis, and probabilistic topic modeling. Sentiment analysis captures tourists' emotions and polarities using generic dictionaries or lexicons trained through machine learning algorithms. It was applied to online tourist reviews about hotels [27] and restaurants [41]. Content analysis reveals the main topics grounded in text sets. It relies on vectorization and dimensionality reduction techniques that are used to disambiguate terms with multiple meanings and to provide a lower-dimensional representation of texts. In tourism, content analysis was applied to model destination image [32]. Probabilistic topic modeling is aimed at extracting key topics and displaying the conceptual structure of text by means of a visual map, network cloud, concept thesaurus, etc. This method is especially useful in case no prior model or set of factors are available for data analysis. The main procedure in this method is selection of the most frequent words in text. Probabilistic topic modeling was used to identify tourism experiences about hotels [3]. As is seen from the above, tourism experiences about memorials have not been analyzed by text mining methods so far.

Methodology

Data Collection. Online reviews about the Lincoln Memorial in Washington, USA, were collected from the American travel website TripAdvisor, which is considered a useful source of insight into visitor experience and an early adopter of user-generated content. TripAdvisor was chosen as its services are free to users, who provide most of the content. It is one of the biggest online communities in the world with around 315 million reviewers and 500 million reviews of hotels, restaurants, attractions, and other travel-related businesses. A TripAdvisor review has a title, short text, information about the reviewer's place of residence, and a one-to-five-star ranking of the quality of the facility or service based on the reviewer's assessment. For this research, only reviews of the US residents were analyzed. The analysis showed that over 6 million visitors from almost all states come to see the attraction yearly. Interestingly, the Lincoln Memorial, which honors a known opponent of slavery, is far more popular with tourists from the Southern States, such as Texas, Georgia, Florida, and North and South Carolina, than with the northerners coming from New York, New Jersey, Connecticut, Maine, Massachusetts, and Pennsylvania.

The Lincoln Memorial's location is the National Mall, Washington, DC, US, 2 Lincoln Memorial Circle, NW Washington 20002, near the intersection of Independence Ave. SW and Daniel Chester French Dr SW (geographic coordinates: DMS Lat. 38°53′21.2928″N DMS Long. 77°3′2.2896″W).

The Lincoln Memorial and other sites in the National Mall and Memorial Parks are always open to the public, but restrooms, museums, and elevators close in the evenings. Rangers are on duty to assist visitors from 9:30 a.m. to 10 p.m. March–October and from 9:30 a.m. to 8 p.m. November–February, with the exception of December 25. The United States Park Police are on duty 24 hours a day throughout the year.

The Lincoln Memorial's surroundings include the west end of the National Mall, a landscape park, and the grassy area between the Capitol Building and the Potomac River. Behind the memorial to the west lies Arlington National Cemetery and the stately Lee-Custis Mansion. To the east is the Washington Monument and Capitol Hill. The massive sculpture of Lincoln faces east toward a long reflecting pool (see Fig. 1).



Fig.1. Location diagram of the Lincoln Memorial, Washington, DC Рис. 1. Схема расположения Мемориала Линкольну, Вашингтон

The memorial was modeled by New York's architect Henry Bacon in the style of a Greek temple. The neoclassic design features 36 Doric columns outside, symbolizing the number of states in the Union at Lincoln's death. The building measures 204 feet long, 134 feet wide, and 99 feet tall, with 44-foot columns. It blends stone from various states: white Colorado marble for the exterior, Indiana limestone for the interior walls, pink Tennessee marble for the floor, and Alabama marble for the ceiling.

The Lincoln Memorial has been the site of various famous speeches delivered by such prominent speakers as Martin Luther King, Jr. and US presidents as well as of ceremonies attended by hundreds of Civil War veterans and others. Thus, the Lincoln Memorial remains a symbol of democratic values and national identity for the American people. Not surprisingly, on the TripAdvisor website the Lincoln Memorial is rated the second of the three most popular memorials in the USA (the first most popular memorial is the National 9/11 Memorial and Museum, and the third one is the USS Arizona Memorial). Nevertheless, according to the web-sites of US memorials, the Abraham Lincoln Memorial is most visited of them: 7.8 million tourists attend it yearly, compared to 3.3 million and 1.5 million visitors to the National 9/11 Memorial and Museum and the USS Arizona Memorial respectively.

Apart from being America's most iconic landmark since its opening in 1922, the monument honoring Abraham Lincoln has important cultural and political implications. It appears on the back of pennies and five-dollar bills. It has been a backdrop in memorable movie scenes, books, and television shows.

For the purpose of the study, we selected 1,000 online reviews about the Lincoln Memorial posted on the TripAdvisor website in 2017–2018. The reviews were downloaded and after punctuation and stop words were removed, the texts were converted to lowercase, and then pre-processing and text analysis were performed using Python version 3.7, available through the Python Software Foundation at http://www.python.org [28]. Two particular modules for Python, Pandas data structures and Word2Vec [19] with Google reviews models (https://github.com/mmihaltz/word2vec-Google-News-vectors), were used for running the algorithms.

Identification of Unique Tourism Experiences. This subsection addresses methodology of identification of unique tourism experiences based on the keyword analysis. This analysis is widely used to investigate tourist experiences from different tourism objects regardless of their kind (from cultural to natural ones). Thus, the specificity of the applied methodology is determined by the type of the

tourist experience itself, i.e., the unique tourists' perception of the attraction. Previous studies of tourism experiences conventionally used the most common keywords in tourist reviews, whereas this study identifies the least frequent words expressing unique features of individual perceptions.

In order to identify the least frequent keywords in the online reviews of the Lincoln Memorial, text pre-processing technique was performed using NLTK in Python. As a result, terms potentially denoting unique tourism experiences were extracted. However, only the most infrequent words, the only ones of their kind, can be said to be unique. In order to retrieve them, Python statistics libraries were used to count word frequencies and select the least frequent terms in the corpus representing unique tourism experiences about the Lincoln Memorial. They were then used to build vector space, an algebraic model representing words as vectors of identifiers. To assess the relationship between the words, the Euclidian distance between them was calculated using the cosine formula. To represent the vector space in a graph, the compression algorithm (Huffman coding) and Matplotlib procedures were applied. After that, sentiment analysis of the terms was performed applying the Microsoft Azure Cognitive Services (https://azure.microsoft.com/ru-ru/services/cognitive-services).

Results

The proposed methodology was applied to the collected data of 1,000 reviews numbering 4,638 words. After deleting noisy data, we received the total number of words equal to 3,536. The application of Python statistics libraries resulted in a bag of words showing significant differences in their frequency, from which only words that occurred once in one review were subjected to further analysis (see Table 1). Table 1 shows 77 words that present tourists' unique experiences. For example, the word *opinions* were used in the following review: 'There is an amazing amount of history, art, culture, business, people, politicsand *opinions*!'. The tourist was struck by the variety of views on different subjects faced on the trip around the Lincoln Memorial.

Words* denoting unique tourism experiences Слова, обозначающие уникальный туристический опыт

Table 1

word*							
cross	straighten	areas	favorable	section	handbag	situational	
urban	leaning	ticket	priority	worse	victim	awareness	
legend	tower	towing	bckup	pick-pockets	digital	prevent	
assured	pisa	possibility	battery	happen	darn	separated	
everything	opps	okay	charger	section	separate	lost	
ahead	fingersonly	along	favorable	worse	phones	common	
tries	drawback	thief	priority	bars	whenon	pairs	
occurrence	screen	trailers	corners	restaurant	picnic	mall	
cities	assemblies	support	zone	weapons	ccw	overflowing	
items	knives	politics	opinions	family	permit	marches	
possessions	group	pockets	minimal	cards	possessions	holder	

The next step in the analysis was the use of word2vec [19] for the words in Table 1 to identify commonalities and differences in semantic groupings of these words. After processing the input data using cosine similarity, Word2vec (https://code.google.com/archive/p/word2vec/source/default/source) produced a vector space with each unique word being assigned a corresponding vector in the space. The vectors of semantically similar words were grouped together in the vector space. To graphically represent the vector space, we applied the compression algorithm (Z-order curve) (SciPy) by transforming n-tuple coordinates into 2-tuple ones. To visualize a two-dimensional graph we used Matplotlib (https://github.com/matplotlib/matplotlib) (see Fig. 2).

The vector space has the axes which detail the vectors' coordinates and the points showing the words grouped according to closeness in their meaning.

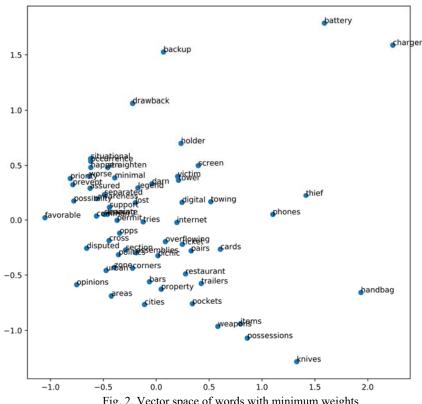


Fig. 2. Vector space of words with minimum weights Puc. 2. Векторное пространство слов с минимальными весами

As is seen in Fig. 1, in the middle of the space, there is a dense concentration of words with common sememes, units of meaning, and there are distant words. By way of example, the words handbag, knives, battery, charger, thief, and phones are far away from the words cross, disputed, section, picnic, pairs, cards, etc. Moreover, the distant words are quite scattered because they are not semantically connected among each other. Thus, the distance between the words shows the degree of similarity between their meanings: the shorter the distance, the more similar the words. Some words form pairs that are characterized by a shared meaning, for instance, the *Internet* and *digital*, *items*

and *possessions*, *situational* and *happen*. Some words form pairs that are characterized by a shared meaning, for instance, the *Internet* and *digital*, *items* and *possessions*, *situational* and *happen*. Some words form clusters, for example, the words *items*, *possessions*, *weapons*, and *knives* have a common meaning of a thing that a person owns or possesses; *areas*, *zone*, *cities*, and *urban* have a common meaning of part of a place.

A noticeable feature of the words in the vector space is that they denote both tangibles (phones, cards, handbag, restaurant, bars, corners, ticket, etc.) and intangibles (support, assured, disputed, minimal, worse, possibility, situational, politics, permit, priority, etc.). Nevertheless, there are far more words denoting intangible items than those denoting tangible ones. The former mostly refer to places, areas, objects' characteristics, actions, and attitudes. This is in line with V. W.S. Tung and J.R.B. Ritchie [36], who argue that experiences involving intangible items are more memorable.

Further, to identify tourists' attitudes to the Lincoln Memorial, the sentiment analysis of 73 words was carried out by the Microsoft Azure Cognitive Services (see Table 2)

Emotionally colored keywords Эмоционально окрашенные ключевые слова

Table 2

Text	Sentiment	Positive	Neutral	Negative
legend	Positive	0,5	0,46	0,04
tries	Negative	0,04	0,17	0,79
drawback	Negative	0	0,01	0,99
favorable	Positive	0,68	0,27	0,05
worse	Negative	0	0	1
victim	Negative	0,01	0,02	0,97
lost	Negative	0	0	1
overflowing	Positive	0.4	0.36	0.24

Table 2 shows only emotionally colored keywords expressing unique tourists' perceptions: 5 negative and 3 positive words (neutral words were removed). Interestingly, the number of the words expressing negative emotions is higher than the number of the words expressing positive emotions. The negative words relate to intangible items with two evaluative words (*worse* and *drawback*), two words denoting an action (*tries* and *lost*) and one word denoting an object of action (*victim*). The words describing positive emotions are also connected with intangible items. Two words denote an attribute of an object (*favorable* and *overflowing*) and one word denotes an object (*legend*). Therefore, not taking into consideration the neutral words, we can infer that unique tourist experiences about the Lincoln Memorial are primarily negative.

Discussion

The identification of unique tourism experiences mostly depends on tourists' emotional perception of touristic settings. Despite a wealth of research on various tourism experiences, unique experiences connected directly with a personalized tourist's perception of the attraction have not been the focus of research so far. Not only are unique tourism experiences determined by uniqueness of the tourist attraction, but they form the dynamic interaction of places, people, and perceptions. This dynamic interaction is a multidimensional phenomenon and evokes positive as well as negative sentiments, as in the case with the Lincoln Memorial when the tourists mentioned knives or thieves in their reviews. A problem of collecting unique tourism experiences is that they are subjective and have different contextual implications; they depend on the time of the trip, the kind of attraction, and the date of extraction. However, they are very valuable as they give a new view on the attraction which encompasses details unnoticed by others but useful for tourists who are planning to visit the attraction. This paper deals with unique tourist experiences about one of the most visited US memorials, the Lincoln Memorial, commemorating wisdom and peace. The unique tourist experiences were extracted from online tourist reviews shared through the Internet. These seem most suitable for the purpose of the study since they are free, short, and informative texts where users write about their tourism experiences in their own words. The analysis of user-generated texts requires unstructured techniques, typically based on text mining methodologies [10]. Following such an approach, this study applied a quantitative methodology to collect US tourists' unique experiences about the Lincoln Memorial. As a result, a bag of words referring to tourism experiences was obtained. We should emphasize that most of these words, for example, favorable, priority, and minimal, denote intangible items. This gives an impression that in online tourist reviews users are prone to sharing their perceptions and impressions with other users rather than offering them tourist guiding for the Memorial. The resulting tourism experiences, presented by the obtained words, were then graphically displayed in a vector space, where the distances are proportional to the words' closeness in meaning, and were subjected to sentiment analysis. The sentiment analysis revealed primarily neutral emotions experienced by the visitors to the Lincoln Memorial. Only 5 words describe tourists' negative emotions and 3 words express positive emotions about the Lincoln Memorial. Thus, out of the 73 words manifesting unique tourism experiences about the Lincoln Memorial, only 8 are emotionally colored. The words expressing negative emotions can be categorized as evaluations/opinions, actions, and objects of action. The words expressing positive emotions are mostly connected with the attributes of an object and the object itself. All the words with negative and positive implications refer to intangible items. These results support the idea that unique tourism experiences are intangible, distinctive, and extremely individual phenomena [22], and are based on cognitive perception [12]. Against the anticipation of emotional response in unique tourism experiences, this paper has inferred that tourists choose neutral language to describe their unique impressions of the Lincoln Memorial, which is our main contribution to the concept of tourism experiences. The practical implication of the study of unique tourism experiences is that they provide an additional advantage of a tourist attraction that can be effectively used by marketing campaigners. Summarizing personalized tourists' perceptions, unique tourism experiences tend to give more specific information for trip predictions

to marketing planners as well as holidaymakers, adding to the comfort and enjoyment of the trip. Intangible unique experiences are particularly significant, since they improve the quality of other tourists' experiences and increase their overall satisfaction and positive future behavior.

Research Contributions and Implications

Following a quantitative approach based on text mining techniques, this study contributes to the research problem of identification and investigation of unique tourism experiences presenting specific details about tourist attractions with emotional and practical implications. Thus, the research provides new insight into the theory of tourism experiences and forms the basis for further research on uniqueness in tourism. Moreover, this article enhances the analysis of the least frequent tourism experiences based on tourism reviews on the worldwide Internet platform, giving a new picture of US domestic tourism. The Web has become the greatest digital and human environment for social sciences. As for tourism studies, travel websites are adopters of user-created content about various kinds of perception that give valuable insight into tourists' experience. However, there is still a lack of research using automated content analysis of user-created content. The main reason is that this kind of research involves a complex combination of computer and social sciences, data mining, and machine learning. In this study, we used computer science for collecting data, statistics for tourism experiences identification, and computer linguistics for evaluating the quality of the experiences and validating the hypothesis. The study gives a new definition of tourism experiences in terms of uniqueness, a different view on the attraction and proves that unique tourism experiences have practical implications for planning tourist trips. Identification of unique tourism experiences has a significant value for tourism marketing planners and travel agents, as information about unique and individualized experiences adds to flexibility of tourist trips and personalized behavior [30]. Unique tourism experiences help marketing planners select relevant practical and emotional information for effective marketing campaigns and meet tourists' needs for new or additional information about attractions to reduce uncertainty about tourism services. Travel managers can use information about unique tourism experiences to make a trip to the attraction safe, comfortable, enjoyable, and memorable, especially after the global pandemic when tourists worldwide strive for new travel experience in safe conditions. In this respect, having determined unique tourism experiences, our paper contributes to travel management and guidelines for tourism. Finally, the text mining techniques used in the study can also complement traditional information systems used by tourism public agencies, which rather rely on surveys and questionnaires than on big data mining since tourism experiences are still measured mostly using surveys in social networks. Unfortunately, shared opinions on travel websites are still not extensively analyzed to identify unique tourist experiences that make contribution to the co-creation of knowledge value by tourist community.

Limitations and Future Research

This research is limited to the TripAdvisor.com US website, but it could be extended to the similar travel websites in other countries or other shared opinions websites. Actually, the data collected through the Internet can be segmented by the attraction, tourists' residence and age group. Regarding the case study, the analysis is limited to one US attraction. A further analysis could compare the unique tourism experiences about the Lincoln Memorial shared online with those about other memorials in the USA with different profiles, for example, the National 9\11 Memorial or the USS Arizona Memorial in order to determine clusters of uniqueness according to their differences. A fuller picture would be given by an analysis of experiences of tourists who are not residents of the USA, who have short\long or business\family trips in the country and who have different cultural backgrounds. Moreover, since memorials are quite popular in most countries in the world including the USA, it is quite useful to compare perceptions of various memorials by different tourists within the framework of inbound and outbound tourism. It will help to identify commonalities and differences in perception of the attraction. Another possible direction of research could be tourism experiences through the eyes of various age groups, for instance, children, youngsters and pensioners. This could broaden the concept of tourism uniqueness and give tourism agencies information on these tourists'

needs and desires. Finally, another possible line of study could be segmenting tourist reviews by their helpfulness to tourists. Highly scored reviews with comments of trust and gratitude for helpful information could be reliable sources for unique tourism experiences studies and marketing planners.

Conclusion

This study proposes a quantitative approach for obtaining unique tourism experiences of American tourists about the Lincoln Memorial from online tourist reviews using text mining techniques. The findings reveal that it is possible to obtain unique tourism experiences, both negative and positive, from online tourist reviews. They mostly cover intangible items and have emotional and practical implications. The identified unique tourism experiences can be used by tourists to plan a comfortable and enjoyable trip, and they can also be used as additional reliable information for developing effective marketing campaigns in tourism.

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Информация об авторах

Смольянина Елена Анатольевна,

кандидат филологических наук, доцент департамента иностранных языков, Национальный исследовательский университет «Высшая школа экономики» — Пермь;

614070, Россия, г. Пермь, ул. Студенческая, 38

Information about the authors

Elena A. Smolianina

Candidate of Philological Sciences, Associate Professor, School of Foreign Languages, HSE University, Perm; 38 Studencheskaya st., Perm, 614070, Russia

e-mail: easmolianina@hse.ru

Морозова Ирина Сергеевна

кандидат филологических наук, доцент департамента иностранных языков, Национальный исследовательский университет «Высшая школа экономики» – Пермь:

614070, Россия, г. Пермь, ул. Студенческая, 38

Irina S. Morozova

Candidate of Philological Sciences, Associate Professor, School of Foreign Languages, HSE University, Perm; 38 Studencheskaya st., Perm, 614070, Russia

e-mail: imorozova@hse.ru

Нина Викторовна Харитонова

кандидат экономических наук, доцент кафедры туризма, Пермский государственный национальный исследовательский университет

614068, Россия, г. Пермь, ул. Букирева, 15

Nina V. Kharitonova

Candidate of Economic Sciences, Associate Professor, Department of Tourism, Perm State University, Perm 15. Bukireva st., Perm, 614990, Russia

e-mail: kharitonovaninaviktorovna@mail.ru

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