Let's Go Cycling in Singapore: An Analysis of Tourists'

Experience on Online User-generated Content

Weisheng Chiu and Ho Keat Leng

Abstract

Purpose- This study explored cycling tourists' experience in Singapore using an exploratory case study.

Design/ methodology/ approach- Tourist's spontaneous reviews (N= 409) posted on TripAdvisor were collected and further analyzed through Leximancer.

Findings- The software identified 31 concepts grouped into five dominant themes of tourists' experiences. In order of relative importance, the themes were *tour, bike, guide, experience, and cycling*. Moreover, it also revealed that most of the tourists have a favorable impression of their cycling experience in Singapore.

Originality/value- The findings suggest that cycling tours can provide tourists with pleasurable experiences. Tourists embark on cycling tours in Singapore to learn more about the city and enjoy new experiences. However, to meet tourists' expectations, it is essential that bicycles are well-maintained and accessible. In addition, tour guides should be attentive and knowledgeable. These have direct effects on tourists' satisfaction level with cycling tours.

Paper type Research paper

Keywords: Cycling Tourism, Singapore, User-Generated Content, Content Analysis, Tourists' Review

Let's Go Cycling: An Analysis of Tourists' Experience on Online User-generated

Content

Introduction

While cycling is traditionally a form of transport, increasingly, it has also

become a form of leisure and recreation. In particular, it is one of the most common

sporting activities on travel trips with many tourists embarking on cycling tours

(Ritchie, 1998, Lamont, 2009). Hence, it is not surprising that cycling tourism has

become the subject of many studies. Most of these studies have focused on how

cycling tourism can be promoted. As such, there are many studies examining the

motivations of tourists, the evaluation of route attributes and the promotion of cycling

tourism programs (Deenihan and Caulfield, 2015, Ritchie, 1998).

On comparison, there have been fewer studies on the experiences of cycling

tourists. It is noted that cycling tourism is mainly experience-based. From the tourists'

perspective, the attractiveness of cycling lies in providing a different experience such

as offering a challenge or an overall feeling of relaxation and well-being (Lee *et al.*,

2014, Ritchie, 1998). Furthermore, tourists can explore indigenous culture and history

to gain a better understanding of a destination (Downward *et al.*, 2009). Therefore,

studies in the experience of cycling tourists can extend knowledge in this area.

For destination marketers and policy planners, examining cycling tourists'

experience is also important. This is because tourists' experience can be critical

antecedents of positive word of mouth and future intention (Volo, 2010). In recent

years, technology has enabled many tourists to share their travel experiences on social

media and other online sites. This has provided the means for obtaining a large

amount of data cheaply for analysis. In this study, the experiences of cycling tourists

as shared on the website TripAdvisor will be examined.

Literature Review

Cycling tourism

Cycling tourism has the potential to contribute to the economic, social and environmental development of a destination (Faulks *et al.*, 2007). As such, policy makers and destination planners in some countries have invested heavily in cycling-related infrastructure in their communities to promote the local development of bicycle tourism (Pucher *et al.*, 2010). For example, some European countries, such as the Netherlands, Denmark, and Finland, have built bicycle trails and routes to boost the demand for bicycle tours and trips (Lumsdon *et al.*, 2009). In comparison, cycling tours are a relatively recent phenomenon in Asia. Only a few Asian countries have recognized the potential in cycling tourism. For instance, Taiwan committed resources to develop bicycle-friendly infrastructure and a cycling route to stimulate cycling tourism and build up its image as a destination for cycling tourists (Lee and Huang, 2012).

Cycling tourism includes a spectrum of cycling activities. In part, this has created difficulty among scholars to agree on the definition of the term (Lamont, 2009, Deenihan and Caulfield, 2015). Some scholars have taken the cue from Gibson's (1998) distinction between active and passive sport tourism, and applied it to cycling tourism (Lamont, 2009, Kulczycki and Halpenny, 2015). For instance, Ritchie, Tkaczynski, & Faulks (2010) defined cycling tourism as 'tourism that involves watching or participating in a cycling event, or participating in independent or organized cycle touring' (p. 411). Participation of cycling activities can include both competitive and non-competitive activities. Non-competitive (i.e. recreational)

cycling tourists are part of cycling tourism as the cycling activity is an integral part of the trip (Lamont, 2009). In this study, this definition of bicycle tourism is used as it focuses on the experience of tourists who participate in activities of independent and organized cycling tours. These activities include bicycle hires and pre-planned cycling tours during a trip on holidays (Ritchie, 1998). As such, these activities can contribute to the local economy and provide a green alternative for tourists to explore their destination city (Handy *et al.*, 2012).

Experience studies in tourism

Tourists' experience has been identified as a pivotal concept in tourism research over the past few decades (Sharpley and Stone, 2014). Many scholars have argued that offering tourists with an opportunity to engage in favorable and memorable experiences is essential to the success of tourism businesses because it leads to beneficial outcomes through higher expenditure, repeat visits, positive recommendations and word-of-mouth (Prebensen *et al.*, 2012). In addition, many studies have addressed the importance of service quality in such experiences (Kouthouris and Alexandris, 2005, Williams and Buswell, 2003, Jennings *et al.*, 2009). Specifically, Jennings *et al.* (2009) argued that tourists' experience is significantly associated with the level of service/product quality, relationship quality, and environment quality.

However, it is noted that tourist experience is a complex and overarching concept that consists of different constituent elements. Thus, it can be challenging to assess and measure an individual's experience (Sharpley and Stone, 2014). Recently, the orchestrated approach has been proposed as a means to analyze tourist experience. This approach views tourist experience as consisting of multiple and coexisting

components; a blend of sensory, affective, cognitive, relationships, behavioral components that define the tourist's world (Pearce and Wu, 2016a). These elements can vary in importance over the duration of the trip and work together to create the whole experience. As such, the experience of a tourist can be understood as analogous to a functioning orchestra with multiple contributors to the overall performance (Pearce, 2011). The orchestrated approach focuses on multiple experiential components that are fused to form the experience of the tourist.

This multiple components of experience can also be used to describe the cycling tourist. In accordance with the definition of cycling tourism proposed by Lamont (2009), Shipway *et al.* (2016) proposed a model that was based on the experiences of participants and spectators in a cycling race event. For both active and passive participants, it argued that the overall experience for sport tourists was built on the interaction between the destination; personal experiences &meanings; and identity and belonging. According to the model, destination is the "stage" for active and passive participants' experience; personal experiences & meaning is constructed through the perception of activity participation on the destination, including atmosphere, emotion, physical challenge/bodily experiences; and identity and belonging refers to sport tourists' sense toward the destination. Shipway *et al.* (2016) further argued that the interaction between these elements creates meaningful and authentic experiences for cycling tourists and reinforce their sense of identity and belong toward the destination.

In summary, it is recognized that cycling tourists' experience could be complex and derived from various sources. The way in which cycling tourists' perception interacts with the destination and cycling activities will also contribute to their overall experience. Hence, the expressive elements constituting experience will be analyzed

6

from online evaluations from the cycling tourists' perspective.

To do so, the multiple experiential components will be analyzed using the computer software Leximancer. This software has been used in earlier studies to examine tourists' multiple experiential components. For example, Pearce and Wu (2016b) adopted the orchestrated approach with Leximancer to assess tourists' experience toward a romantic themed attraction through online reviews. The results found that tourists have different aspects of experience toward the attraction. Similarly, Chiu *et al.* (2016) used the orchestrated approach with Leximancer to explore international tourists' experience of watching baseball games in Korea and found different themes from their online reviews. Accordingly, the current study will examine tourists' experience of cycling in Singapore using the orchestrated approach and Leximancer software. The elements constituting experience will be analyzed from emic, online evaluations of cycling tourists.

Online user-generated content

Due to the rapid growth of web 2.0 applications, Internet users are not only able to receive but also create information on the Internet. This has resulted in the explosion of online user-generated content (UGC) on websites such as travel blogs (e.g., TravelBlog), online travel communities (e.g. LonelyPlanet), tourist reviews (e.g. TripAdvisor), and social networks (e.g. Facebook). Lu & Stepchenkova (2015) described UGC as a "creative work that is published on publicly accessible websites and is created without a direct link to monetary profit or commercial interest" (p. 120). UGC can come in various forms including text, photos, audio and video clips.

Potential visitors to a foreign country have limited knowledge of destinations they have not previously visited. As such, they depend on information to shape their

destination image and inform their decision. The internet has become the main source of information for tourists. It has a substantial influence on their travel planning behavior through their ability to shape images and perceptions of travel destinations. Tourists take to social media to share their experiences of their travel and through this electronic word-of-mouth, affect the decision for other tourists by shaping perceptions of travel destinations (Volo, 2010, Munar, 2011). For example, a recent UK survey found that most of the consumers use online reviews from UGC websites to obtain information in planning their itinerary (eMarketer, 2015). This has led many tourism operators to integrate UGC websites into their online marketing strategies.

It must be noted that some researchers are concerned with the credibility and validity of UGC because of the subjective nature of online travel opinions and evaluations from unknown persons (Litvin *et al.*, 2008, Leng, 2013). However, many studies suggest that this effect may be limited as there is a higher perceived credibility and validity of opinions expressed in UGC as compared with traditional tourism information sources, such as tour guidebooks, ads in papers or magazine, and travel agencies (Akehurst, 2009, Ayeh *et al.*, 2013, GrØnflaten, 2009). Because UGC allows for the gathering of rich, authentic, and unsolicited customer feedback on visitor experiences in destinations, it can help marketers and researchers understand tourists' opinions, experiences, and attitudes towards destinations better (Lu and Stepchenkova, 2015).

Also, UGC plays a critical role in managing reputation and building image for both the hotel or the destination (Baka, 2016). Due to data availability and speed in data collection, many researchers in the leisure and hospitality domain have tapped on this source to collect and analyze tourist's experience and behavior (Lu and Stepchenkova, 2015, Johnson *et al.*, 2011, Lai and To, 2015). For example, Barreda

and Bilgihan (2013) gathered 17,357 online traveler reviews from TripAdvisor, corresponding to 3,124 hotels, and analyzed hotel experiences. Furthermore, Tseng *et al.* (2015) collected 630 blogs from TravelPod and TravelBlog and explored the destination image of international tourist toward China. Given the emergence and application of UGC, the current study collects and analyzes UGCs to gain valuable insight of tourists' experience.

Methodology

Research context: Singapore

Singapore was selected as the cycling tourism destination in this study. Singapore is one of the more popular destinations among Southeast Asian countries. It draws much attention from destination marketers and tourism researchers because it is able to attract relatively large numbers of visitors with high expenditures (UNWTO, 2015). In a country with limited land space and relatively few natural and cultural attractions, this has been considered remarkable (Teo and Chang, 2012). According to a report by the Singapore Tourism Board in 2014, the number of annual international visitor arrivals reached a historic high in 2013 with over 15 million arrivals (Singapore Tourism Board, 2014). The contribution of the tourism industry to GDP in 2014 was SGD 39.7 billion, accounting for 10.9 % of GDP (World Travel & Tourism Council, 2014).

Moreover, Singapore is known as a cycling-friendly tourism destination. Singapore was nominated by CNN Travel as one of the best biking Asian cities because it provides smooth roads, beautiful views, and plenty of services (Lam, 2010). Due to its geographic location, Singapore possesses a pleasant climate and suitable weather conditions which are critical attributes for cycling tourism (Lee *et al.*,

2014). With the launch of the National Cycling Plan, the Singapore government has built a comprehensive cycling route network which enhances the environment for cycling. As such, it is considered as a suitable destination for this study.

Information source and data collection

The information source for this research is from online user-generated reviews. There are various websites for tourist review (e.g., Google reviews, Lonely Planet, TripAdvisor, and Virtual Tourists). Among these websites, Tripadvisor was selected as the source of data because of its high website traffic. TripAdvisor branded sites make up the world's largest travel community, reaching 375 million unique monthly visitors with more than 250 million reviews and opinions. More importantly, TripAdvisor's terms of use allow for the collection of its reviews for research purposes (TripAdvisor, 2015).

Tourists' reviews on their biking experiences in Singapore were collected from TripAdvisor for this study. There were 429 reviews on local companies' bike tour services in Singapore in various languages (e.g., English, Chinese, Japanese, Russian, etc.) on Tripadvisor on December 31, 2015 with the earliest review posted in October 2012. Reviews that were not in written in the English language were removed from the analysis. The final number of reviews for analysis was 409 reviews.

Besides the content of the reviews, additional information on the satisfaction level of reviewers, their date of posts, their country of origin and their level of review experience based on TripAdvisor's classification were also collected for analysis. Each review was coded as a case in an excel document. Consequently, this resulted in 409 review units with a total of 61,716 words. This is detailed in Table 1.

[Insert Table 1]

Data analysis

The data collected from TripAdvisor were analyzed by Leximancer software version 4.0, which has received recent interest from researchers (Young *et al.*, 2015). Leximancer is a text analytics tool that analyzes the content of textual documents in electronic format and explores the extracted information statistically and visually. It inductively identifies key concepts and themes appearing in a set of texts by analyzing words that frequently co-occur in an unsupervised manner (Smith and Humphreys, 2006). The fundamental assumption of Leximancer analysis is that there are underlying meanings and structures in any texts such as the usage of words and order of sentences. Based on its analysis, it develops an overarching concept map which visually represents the strength of association between concepts and provides a conceptual overview of the semantic structure of the textual data (Crofts and Bisman, 2010).

The analytical process of Leximancer consists three steps. In the first stage, Leximancer identifies a ranked list of concepts using semantic and relational extraction from the information text (e.g. interviews, reviews, and focus group transcript) by calculating the frequency and the co-concurrence of words. Secondly, Leximancer applies these concepts to propagate a thesaurus of words that is closely related to the concepts, and thereby producing semantic and relational content around the concept. Finally, the program groups the similar and related concepts into theme level based on how often they occur together in the block of text (Crofts and Bisman, 2010, Smith and Humphreys, 2006, Angus *et al.*, 2013). Figure 1 shows the semantic pattern extraction process and also illustrates the three most critical units in Leximancer analysis: word, concept, and theme. Leximancer initially populates a

ranked list of terms (i.e., concept) using indirect and semantic extraction from the text (i.e., word). Then, the extracted concepts which co-occur frequently generate concept maps including different themes.

[Insert Figure 1]

The use of Leximancer can potentially overcome subjectivity in coding and data interpretation. This is because it is highly consistent in the analytical process and requires minimal manual intervention from researchers. Hence, it has also been suggested that Leximancer is suitable for exploratory studies and effective for analyzing large volumes of data (Sotiriadou *et al.*, 2014).

Leximancer has been used in several studies in the tourism field (Wu *et al.*, 2014, Tseng *et al.*, 2015, Tkaczynski *et al.*, 2015, Chiu *et al.*, 2016). In these studies, it was suggested that visual concept maps and statistical outputs generated from Leximancer can be useful in gaining greater insights and comprehension of tourists' textual data such as reviews or comments (Wu *et al.*, 2014). However, it should be noted that Leximancer is limited in its ability to capture the style or implied tone from the text. As such, the researcher's skill in interpretation is critical to the success of these studies using Leximancer software (Hansson *et al.*, 2010).

Findings

42 concepts were extracted by the Leximancer program from 409 reviews of Tripadvisor at the first stage. However, not all these concepts are presented in the subsequent results as it is necessary to refine the major concept list (Crofts and Bisman, 2010). Adopting the guidelines by Pearce and Wu (2015) and Wu et al. (2014) and , the concepts generated from the analysis were assessed, and only significant concepts were retained. Accordingly, concepts that were simply destination

labels (e.g. Singapore, Merlion Park, and Marina Bay) were not included as they are not meaningful for our purpose of assessing tourists' experience. By doing so, the results will be more focused on tourists' experience through the analysis of Leximancer program. Moreover, concepts were not significant (e.g. visit, gave, and provided) were eliminated. Moreover, some similar concepts were merged (e.g. bike, bikes, and bicycles; cycling, biking, and riding; place and places; tour, tours, and trip). Finally, 31 major concepts were retained for the further analysis.

Overall cycling experience in Singapore

Figure 2 illustrates the concept map produced by Leximancer. The map consists of the 31 concepts (shown as small gray nodes) which are grouped into five themes (indicated by the larger colored circles). The five themes and their corresponding connectivity rates (in parentheses) were *tour* (100%), *bike* (73%), *guide* (67%), *experience* (45%) and *cycling* (25%). Connectivity rate in the context of Leximancer analysis denotes the concepts in the theme which are mentioned together a specific percentage of times. The connectivity rates (in parentheses) indicate the relative importance of themes with the most important theme at 100%. These five dominant themes present tourists' cycling experiences in Singapore. The connectivity rate percentages from Leximancer were calculated using the connectedness of concepts within these themes and indicated the relative importance of these themes within the dataset (Leximancer, 2015).

[Insert Figure 2]

Tour was the most significant theme found in the tourists' reviews of cycling in Singapore. The single word of *tour* was mentioned 466 times in the 409 reviews. This was not surprising as the data was taken from reviews of cycling trips or tours. As

13

such, the focus was on the tour itself. The *tour* theme included the concepts of *morning, recommend, day, and group*.

Comments were on the tours that the reviewers went on i.e. what they saw and the places they visit. In particular, the advantages of a cycling tour were also discussed. Consequently, some reviewers may recommend the tour on their review depending on whether they were satisfied with the trip. Others provide suggestions as to the specifics of the trip. For example, due to the hot and humid weather in Singapore, some reviews recommended morning or night trips while others discusses the benefits of going on a group tour instead of a solo tour.

I can't speak highly enough of the wonderful tour I had. It was a fantastic way to see and learn about Singapore. I recommend this tour to all.

I ventured from Clarke Quay to Gardens by the Bay, Marina barrage, streets of Bugis including Haji Lane and lastly Chinatown! ... Highly recommend for adventurists who wants to visit Singapore city on bike!!

The morning tours will be cooler and easier to manage if you suffer from heat in any way.

The second theme is *bike*, which is linked to the concepts of *rentals, time* and *ride*. The word bike was mentioned 302 times in the 409 reviews. The reviews showed that for many reviewers, the quality of the bike including the level of comfort and maintenance is critically important. When the bikes are not in good condition, it can be upsetting for the tourists. In addition, it was also important to tourists that the bicycles are delivered in a timely manner as expectedly, this has an impact on the

tourists' sightseeing plans.

The bikes are very high quality for rental. They are also kept very clean and well maintained.

The bikes are of good quality, light weight and even fold up if needed. Mine was dropped off and picked up from my hotel at no extra charge and I got to see so much of Singapore that I just couldn't have on foot or by cab/train.

The gear levers were difficult to turn and didn't hit the entire range of gears from Low to High. We also had the chains come off both bikes a total of 4 times, from simple gear changes…The staff was very friendly and talkative, but the bicycles themselves were awful.

The third largest theme is *guide*. The term *guide* is the second most frequently used word in the reviews with 322 counts. This theme is linked to other words including *friendly, history, local, and interesting*. The reviews showed that besides the condition of the bicycles, the quality of the local guide was important to the tourists' experience of the bicycle tour. A guide who is friendly and knowledgeable about local history, food and stories has a positive effect on tourists.

Our guide was really friendly and knowledgeable. The tour stopped for a snack in the morning at a local place for Kaya toast and sweet tea, it was delicious!

Our guide Tony was great - stopping regularly to point out interesting places, buildings, temples and tell us the history of the area.

It was noted that *history* had a high number of connections with the word *city*. These two words co-occurred 51 times. This suggests that tourists considered biking as a good way to know the city and its history. Clearly, this is also dependent on having a guide that is knowledgeable on the history of the city.

Great way to see the city and learn about the history and various cultures in Singapore.

Our tour guide was fantastic, explaining every artifact and building with such passion and love for his country.

The fourth theme is *experience*, which was used 89 times in the 409 reviews. The word e*xperience* was connected to nouns like *places* and *things*. It was also connected to adjectives *best* and *nice*, indicating tourists' favorable perceptions of their interactions with places and things while on a cycling tour in Singapore.

The morning was a nice ride around the streets, we covered a lot of ground and saw a lot of landmarks.

We saw some of the city's highlights, plus more local areas. The trip through the residential areas and hawkers market was great. We also stopped for a Singaporean breakfast and a glass of sugarcane juice. Wonderful experience!

The final theme was *cycling*, which is used 104 times in the reviews. This theme includes the words *easy*, *ride* and *hours*. This theme is on the cycling experience itself i.e. whether it was easy or too long. It is close to the themes of *bike* and *experience* which suggests that whether the cycling was easy or enjoyable was dependent

primarily on the quality of the bicycle.

The ride was easy and we did it at a leisurely pace in under 3 hours.

The bike is easy to handle and comfortable to ride for long hours.

The pace was really comfortable and the rest stops were great...

In addition, as reported in Table 1, most of the tourists (83.8%) had excellent biking experiences in Singapore. Further analysis by Leximancer's Sentiment Lens identified 591 positive terms but only 14 negative terms (see Figure 3). This suggests that many of the tourists had a favorable impression of their cycling experience in Singapore.

[Insert Figure 3]

The small number of negative experiences is due mainly to the poor quality of the bicycles. The importance of good quality bicycles to the overall experience of the bicycle tour was discussed earlier. Companies offering bicycle tours or rental services need to ensure that their bicycles are well-maintained as these can positively affect the level of tourists' satisfaction during the biking tour.

...Tires were well worn and the chain was rusty! The seat height adjustment would not hold and had to be adjusted. The seat tilt could not be adjusted. The handle bar post was wobbly and could not be adjusted which made steering imprecise. The rear brake was inoperative!!!!...dangerous! The derailleur was frozen in 5th gear. Finally the right grip slid off of the handle bar while riding. I'll not be renting here again.

To a lesser extent, a guide that is not attentive can also affect the experience of tourists. The earlier section discussed how a knowledgeable and friendly guide is essential to the tourist in learning more about the city and experiencing its sounds and sights. In this theme, it can be seen that an attentive guide can make the trip less strenuous by slowing down the pace, highlighting difficult stretches of the trip. When the guide is not attentive to the needs of the tourists, the trip will be uncomfortable and unenjoyable.

…Tour Guide was not attentive to his group while riding around the city (i.e. letting them know there is a sharp uphill/downhill, or a sharp left/right turn).

…The guide forgot to give us the bottle of water that comes with the tour until the end.

In summary, the findings demonstrate that tourists had positive cycling experiences in Singapore and recommended the cycling tours highly. More importantly, it is worth noting that the quality of bicycles and guides plays a major role in influencing the experience of tourists. The objective for tourists going on a bicycle tour was to learn more about the city and enjoy new experiences. Clearly, it also means that tourists want to achieve this objective that meets their expectations in terms of responsiveness and comfort. To do these, tourists require tours that provide new knowledge and experiences, bicycles that are well-maintained and easily accessible and finally, guides that are attentive, friendly and knowledgeable. Through these, tourists will then be able to enjoy their cycling experience.

Discussion and Conclusion

Cycling is considered a common leisure activity and an important component of many tourist experiences (Ritchie *et al.*, 2010, Kulczycki and Halpenny, 2015). The aim of this study was to examine tourists' cycling experience from online reviews because online communications are less restrictive when compared to structured questions in traditional surveys. Hence, this allows tourists to share a broad range of sensory, affective, cognitive, relationships, cognitive, behavioral components of their cycling trip, culminating in an orchestrated approach to defining their cycling experience (Pearce, 2011, Pearce and Wu, 2016a).

By using Leximancer in analyzing the data, the study was able to analyze a large amount of data efficiently as the software was able to provide an analysis of tourists' cycling experience in Singapore by generating both visual diagrams and lexical concepts. By analyzing the themes generated by Leximancer, the study found five dominant themes in the reviews of cycling tourists on TripAdvisor: *tour*, *bike*, *guide*, *experience* and *cycling*.

Cycling tours can be a viable form in exploring an unknown destination. Tourists can visit many different places and experience the city from a different perspective. It is a great way to easily travel around a destination and closely explore the indigenous people, culture, and history (Downward *et al.*, 2009). This was evident from the findings of this study. Singapore is a small country, spanning about 50 km from east to west and 30 km from north to south. It is also a modern city state with an extensive public transportation network. As such, it is not difficult for tourists to explore Singapore and visit the shopping belt in Orchard Road and other tourists' attractions. However, cycling tours allow tourists to visit many places of cultural and historical interest more closely. For example, cycling tours allow tourists to explore Chinatown, Bugis and old housing estates more thoroughly. They also allow cycling tourists the

opportunity to experience local life and fare.

Even so, the findings suggest that the quality of the bicycles available to tourists is an important factor. The quality of the bicycles affects the comfort of tourists and the ease in cycling. This has a direct effect on the satisfaction level of tourists as they will be on the bicycles for a prolonged period of time. In addition, guides can play an important role in affecting the experience of the tourist. A knowledgeable guide can help tourists understand the local culture and history better. More importantly, as cycling is a physical activity which can be strenuous for some tourists, an attentive guide can make the experience for tourists more enjoyable by ensuring that the pace is appropriate and scheduling sufficient stops.

The findings echo with the experience model proposed by Shipway *et al.* (2016). Most of the themes and concepts extracted from Leximancer were relevant to the personalized experience and meanings from tourists. Moreover, various emotional concepts contribute to tourists' experience. The themes *experience* and *cycling* indicate various pleasant atmosphere and emotions (i.e., *nice, best*, and *enjoyed*) as well as bodily experience (i.e., *easy*) perceived by tourists during the cycling trip. It can be found that these themes contained many positive emotional terms. It indicates that tourist' emotional expression significantly contributes to their overall travel experience (Nawijn *et al.*, 2013). Moreover, the concept *tour* is closely related to *group*, indicating the experience of social interaction which enforces social identity and belonging among tourists. Clearly, the interaction between tourists, guides, and bicycles largely contributes to tourist experience (i.e., themes of *guide* and *bike*).

It also found that these themes and concepts are significantly associated with the bicycle rental services. These findings are supported by previous studies where service quality was found to be key to tourists' holistic experience (Kouthouris and

20

Alexandris, 2005). In particular, tangible service quality (i.e., bicycle) plays a more significant role in tourists' perception during the trip (Kouthouris and Alexandris, 2005, Williams and Buswell, 2003, Jennings *et al.*, 2009). Furthermore, some studies emphasized the essential role of tour guides in the success of the tourism industry and positive experience of tourists toward a destination (Mak *et al.*, 2011). The quality of interaction between guides and tourists can have an influence on the travel experience. Although Singapore has a conducive cycling environment for tourists (Lam, 2010, Lee *et al.*, 2014), the findings of this study suggest that tangible quality (i.e., bike) and interaction quality (i.e., guide) both significantly contribute to tourists' positive experience.

Practical implications

This study also provides many practical implications for tourism marketers. The findings evidence that cycling tours not only facilitate tourists to visit an attraction, but also can provide pleasurable experiences for the tourists. In particular, Singapore is a city where is suitable for the development of cycling tourism due to its geographic location and comprehensive cycling routes. Therefore, the findings from this study suggest that there is potential for Singapore to develop cycling tourism further as tourists can have positive experiences from this activity. Positive comments on experiences with bike tour in Singapore can play an important role in influencing other potential tourists' to visit Singapore. As such, the government may need to consider enhancing its cycling-related infrastructure and bicycle route networks to reach various local areas of interests within Singapore to attract more tourists to take up cycling tours.

Second, the study suggests that companies offering bicycle rental services and

guided bicycle tours can play an important role in developing cycling tourism. There are not many companies operating cycling tours in Singapore and most of these are small outfits. As such, the number of planned trips offered by the companies are usually small but because of their small size, the companies are also able to offer customized cycling tours. Consequently, these companies may not have established processes for ensuring maintenance of bicycles, established service standards or well-trained guides. In addition, the industry may not be well-regulated given its small size. This study suggests that companies operating cycling tours need to ensure that their bicycles are of good quality and well-maintained. In addition, they need to consider their level of responsiveness to the needs of tourists including the delivery of the bicycles and the training of guides to be both attentive and knowledgeable.

Moreover, it is suggested that local hotels can collaborate with these bike hire companies and provide visitors an alternative way to explore Singapore. This strategic alliance between the hotel industry and bike rental companies would not only facilitate the development of Singapore tourism but also offer better service packages which can contribute to hedonic tourist experience. Hotels and bike rental companies can work together and help tourists explore various attractions in Singapore.

As the quality of bicycles and guides are critical to the bicycle tourist, it further suggests that policy makers may need to engage providers of bicycle rental and guide tours more proactively. By doing so, it can ensure that there is an adequate level of quality and that tourists' experience remain positive. The Singapore government has always taken a proactive role when it comes to tourism. It makes considerable effort to make Singapore tourist-friendly (Wong *et al.*, 2008). As such, it is possible to envisage the government engaging commercial operators to provide tourists better experiences in this area in future.

Limitation

There are several limitations in this study. Firstly, this study did not examine for differences across gender and age. Secondly, as only reviews written in English were collected and analyzed in this study, it did not consider the experiences of tourists who have submitted reviews in different languages. This is also a limitation in earlier studies using data from UGC (Schuckert *et al.*, 2015). It is possible that visitors from a different demographic segment or region may offer a different perspective. Without diversity in the sample, there may be limited opportunities to seek out deviant cases and identify a full range of factors and characteristics for this study (Mason, 2002). Lastly, as the data was collected from Tripadvisor, it is subjected to self-selection bias, and it was not possible to probe respondents for further clarification or verification.

References

Akehurst, G. (2009). User generated content: The use of blogs for tourism organisations and tourism consumers. *Service Business,* Vol. 3 No. 1, pp. 51-61.

Angus, D., Rintel, S. and Wiles, J. (2013). Making sense of big text: A visual-first approach for analysing text data using Leximancer and Discursis. *International Journal of Social Research Methodology,* Vol. 16 No. 3, pp. 261-267.

Ayeh, J. K., Au, N. and Law, R. (2013). "Do we believe in TripAdvisor?" Examining credibility perceptions and online travelers' attitude toward using user-generated content. *Journal of Travel Research,* Vol. 52 No. 4, pp. 437-452.

Baka, V. (2016). The becoming of user-generated reviews: Looking at the past to understand the future of managing reputation in the travel sector. *Tourism Management,* Vol. 53 No., pp. 148-162.

Barreda, A. and Bilgihan, A. (2013). An analysis of user-generated content for hotel experiences. *Journal of Hospitality and Tourism Technology,* Vol. 4 No. 3, pp. 263-280.

Chiu, W., Bae, J.-s. and Won, D. (2016). The experience of watching baseball games in Korea: An analysis of user-generated content on social media using Leximancer. *Journal of Sport & Tourism,* Vol.   No., pp. 1-15.

Crofts, K. and Bisman, J. (2010). Interrogating accountability: An illustration of the use of Leximancer software for qualitative data analysis. *Qualitative Research in Accounting & Management,* Vol. 7 No. 2, pp. 180-207.

Deenihan, G. and Caulfield, B. (2015). Do tourists value different levels of cycling infrastructure? *Tourism Management,* Vol. 46 No., pp. 92-101.

Downward, P., Lumsdon, L. and Weston, R. (2009). Visitor expenditure: The case of cycle recreation and tourism. *Journal of Sport & Tourism,* Vol. 14 No. 1, pp. 25-42.

eMarketer. (2015). *Online reviews influence travel-related purchases in the UK* [Online]. Available: http://www.emarketer.com/Article/Online-Reviews-Influence-Travel-Related-Purchases-UK/1012664#sthash.Nx8AmooV.dpuf [Accessed September 3 2015].

Faulks, P., Ritchie, B. and Fluker, M. (2007). Cycle tourism in Australia: An investigation into its size and scope. Gold Coast, Australia: Sustainable Tourism Cooperative Research Centre.

Gibson, H. J. (1998). Sport tourism: A critical analysis of research. *Sport Management Review,* Vol. 1 No. 1, pp. 45-76.

GrØnflaten, Ø. (2009). The tourist information matrix – Differentiating between

sources and channels in the assessment of travellers' information search. *Scandinavian Journal of Hospitality and Tourism,* Vol. 9 No. 1, pp. 39-64.

Handy, S., Heinen, E. and Krizek, K. J. (2012). Cycling in small cities. *In:* BUEHLER, R. & PUCHER, J. R. (eds.) *City Cycling.* The MIT press, Cambridge, MA, pp.

Hansson, T., Carey, G. and Kjartansson, R. (2010). A multiple software approach to understanding values. *Journal of Beliefs & Values,* Vol. 31 No. 3, pp. 283-298.

Jennings, G., Lee, Y.-S., Ayling, A., Lunny, B., Cater, C. and Ollenburg, C. (2009). Quality Tourism Experiences: Reviews, Reflections, Research Agendas. *Journal of Hospitality Marketing & Management,* Vol. 18 No. 2-3, pp. 294-310.

Johnson, P. A., Sieber, R. E., Magnien, N. and Ariwi, J. (2011). Automated web harvesting to collect and analyse user-generated content for tourism. *Current Issues in Tourism,* Vol. 15 No. 3, pp. 293-299.

Kouthouris, C. and Alexandris, K. (2005). Can service quality predict customer satisfaction and behavioral intentions in the sport tourism industry? An application of the SERVQUAL model in an outdoors setting. *Journal of Sport & Tourism,* Vol. 10 No. 2, pp. 101-111.

Kulczycki, C. and Halpenny, E. A. (2015). Sport cycling tourists' setting preferences, appraisals and attachments. *Journal of Sport & Tourism,* Vol. No., pp. 1-29.

Lai, L. S. and To, W. M. (2015). Content analysis of social media: A grounded theory approach. *Journal of Electronic Commerce Research,* Vol. 16 No. 2, pp. 138-152.

Lam, T. (2010). 5 best biking cities in Asia. *CNN Travel* [Online]. Available: Retrieved from http://travel.cnn.com/explorations/play/asias-most-bike-friendly-cities-982373.

Lamont, M. (2009). Reinventing the wheel: A definitional discussion of bicycle tourism. *Journal of Sport & Tourism,* Vol. 14 No. 1, pp. 5-23.

Lee, C. F., Chen, P. T. and Huang, H. I. (2014). Attributes of destination attractiveness in Taiwanese bicycle tourism: The perspective of active experienced bicycle tourists. *International Journal of Hospitality & Tourism Administration,* Vol. 15 No. 3, pp. 275-297.

Lee, C. F. and Huang, H. I. (2012). The attractiveness of Taiwan as a bicycle tourism destination: A supply-side approach. *Asia Pacific Journal of Tourism Research,* Vol. 19 No. 3, pp. 273-299.

Leng, H. K. (2013). Methodological issues in using data from social networking sites. *Cyberpsychology, Behavior, and Social Networking,* Vol. 16 No. 9, pp. 686-689.

Leximancer. (2015). *Leximancer FAQ* [Online]. Available: https://www.leximancer.com/faq/ [Accessed July 15 2015].

Litvin, S. W., Goldsmith, R. E. and Pan, B. (2008). Electronic word-of-mouth in hospitality and tourism management. *Tourism management,* Vol. 29 No. 3, pp. 458-468.

Lu, W. and Stepchenkova, S. (2015). User-generated content as a research mode in tourism and hospitality applications: Topics, methods, and software. *Journal of Hospitality Marketing & Management,* Vol. 24 No. 2, pp. 119-154.

Lumsdon, L., Weston, R., McGrath, P., Nick, D., Peeters, P., Eijgelaar, E. and Piket, P. (2009). *The European cycle route network EnroVelo: Challenges and opportunities for sustainable tourism* [Online]. Available: http://ec.europa.eu/enterprise/sectors/tourism/iron-curtain-trail/files/ep_studyeurovelo_en.pdf [Accessed August 16, 2015].

Mak, A. H., Wong, K. K. and Chang, R. C. (2011). Critical issues affecting the service quality and professionalism of the tour guides in Hong Kong and Macau. *Tourism Management,* Vol. 32 No. 6, pp. 1442-1452.

Mason, J. (2002). *Qualitative researching,* Sage Publications, London, UK.

Munar, A. M. (2011). Tourist-created content: rethinking destination branding. *International Journal of Culture, Tourism and Hospitality Research,* Vol. 5 No. 3, pp. 291-305.

Nawijn, J., Mitas, O., Lin, Y. and Kerstetter, D. (2013). How do we feel on vacation? A closer look at how emotions change over the course of a trip. *Journal of Travel Research,* Vol. 52 No. 2, pp. 265-274.

Pearce, P. L. (2011). *Tourist behaviour and the contemporary world,* Channel View Publications, UK, Bristol.

Pearce, P. L. and Wu, M.-Y. (2015). Entertaining international tourists: An empirical study of an iconic site in China. *Journal of Hospitality & Tourism Research,* Vol.   No.

Pearce, P. L. and Wu, M.-Y. (2016a). Chinese tourists'on-site experience in florence: Applying the orchestra model. *In:* LI, X. (ed.) *Chinese outbound tourism 2.0.* Apple Academic Press, Ontario, Canada, pp. 199-214.

Pearce, P. L. and Wu, M.-Y. (2016b). Tourists' evaluation of a romantic themed attraction: Expressive and instrumental issues. *Journal of Travel Research,* Vol. 55 No. 2, pp. 220-232.

Prebensen, N. K., Woo, E., Chen, J. S. and Uysal, M. (2012). Motivation and involvement as antecedents of the perceived value of the destination experience. *Journal of Travel Research,* Vol.   No., pp. 0047287512461181.

Pucher, J., Dill, J. and Handy, S. (2010). Infrastructure, programs, and policies to

increase bicycling: An international review. *Preventive Medicine,* Vol. 50, Supplement No., pp. S106-S125.

Ritchie, B. W. (1998). Bicycle tourism in the South Island of New Zealand: Planning and management issues. *Tourism Management,* Vol. 19 No. 6, pp. 567-582.

Ritchie, B. W., Tkaczynski, A. and Faulks, P. (2010). Understanding the motivation and travel behavior of cycle tourists using involvement profiles. *Journal of Travel & Tourism Marketing,* Vol. 27 No. 4, pp. 409-425.

Schuckert, M., Liu, X. and Law, R. (2015). Hospitality and Tourism Online Reviews: Recent Trends and Future Directions. *Journal of Travel & Tourism Marketing,* Vol. 32 No. 5, pp. 608-621.

Sharpley, R. and Stone, P. (2014). *Contemporary tourist experience: Concepts and consequences,* Routledge, NY.

Shipway, R., King, K., Lee, I. S. and Brown, G. (2016). Understanding cycle tourism experiences at the Tour Down Under. *Journal of Sport & Tourism,* Vol.   No., pp. 1-19.

Singapore Tourism Board (2014). Annual report on tourism statistics 2013. Singapore: Singapore Tourism Board.

Smith, A. E. and Humphreys, M. S. (2006). Evaluation of unsupervised semantic mapping of natural language with Leximancer concept mapping. *Behavior Research Methods,* Vol. 38 No. 2, pp. 262-279.

Sotiriadou, P., Brouwers, J. and Le, T.-A. (2014). Choosing a qualitative data analysis tool: A comparison of NVivo and Leximancer. *Annals of Leisure Research,* Vol. 17 No. 2, pp. 218-234.

Teo, P. and Chang, T. C. (2012). Singapore: Tourism development in a planned context. *In:* HALL, C. M. & PAGE, S. (eds.) *Tourism in south and southeast Asia.* pp. 117-128.

Tkaczynski, A., Rundle-Thiele, S. R. and Cretchley, J. (2015). A vacationer-driven approach to understand destination image: A Leximancer study. *Journal of Vacation Marketing,* Vol. 21 No. 2, pp. 1-12.

TripAdvisor. (2015). *TripAdvisor website terms, conditions and notices* [Online]. Available: http://www.tripadvisor.com/pages/terms.html [Accessed July 12 2015].

Tseng, C., Wu, B., Morrison, A. M., Zhang, J. and Chen, Y.-C. (2015). Travel blogs on China as a destination image formation agent: A qualitative analysis using Leximancer. *Tourism Management,* Vol. 46 No., pp. 347-358.

UNWTO (2015). UNWTO Tourism hightlights. *In:* 2015 (ed.). Madrid, Spain: World Tourism Organization.

Volo, S. (2010). Bloggers' reported tourist experiences: Their utility as a tourism data

source and their effect on prospective tourists. *Journal of Vacation Marketing,* Vol. 16 No. 4, pp. 297-311.

Williams, C. and Buswell, J. (2003). *Service quality in leisure and tourism,* CABI publishing, UK.

Wong, E. P., Bauer, T. G. and Wong, K. K. (2008). A critical comparison of tourism policies of Hong Kong and Singapore—an avenue to mutual learning. *International Journal of Tourism Research,* Vol. 10 No. 3, pp. 193-206.

World Travel & Tourism Council (2014). Economic impact 2014 Singapore. London, UK: World Travel & Tourism Council.

Wu, M.-Y., Wall, G. and Pearce, P. L. (2014). Shopping experiences: International tourists in Beijing's Silk Market. *Tourism Management,* Vol. 41 No., pp. 96-106.

Young, L., Wilkinson, I. and Smith, A. (2015). A Scientometric analysis of publications in the Journal of Business-to-Business Marketing 1993–2014. *Journal of Business-to-Business Marketing,* Vol. 22 No. 1-2, pp. 111-123.

Table 1

Information of the tourists biking in Singapore

Demographic	Dimensions	Number (n = 409)	%
Satisfaction level	Excellent	344	84.1
	Very good	59	14.4
	Average, poor and terrible	6	1.5
Year of posting	2012 (from October)	14	3.4
	2013	106	25.9
	2014	91	22.2
	2015 (until December)	198	48.5
Tourist origin	Asia	94	23.0
	North America	74	18.1
	Europe	72	17.6
	Oceania	87	21.3
	Other parts of the world	5	1.2
	Not specified	77	18.8

Figure 1 Simplified model of semantic pattern extraction in Leximancer (Adopted from Crofts and Bisman 2010)
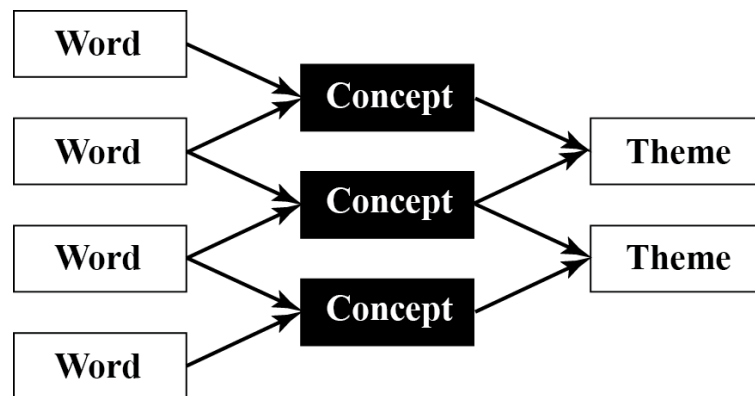
Figure 2

Overall representation of the biking experiences in Singapore
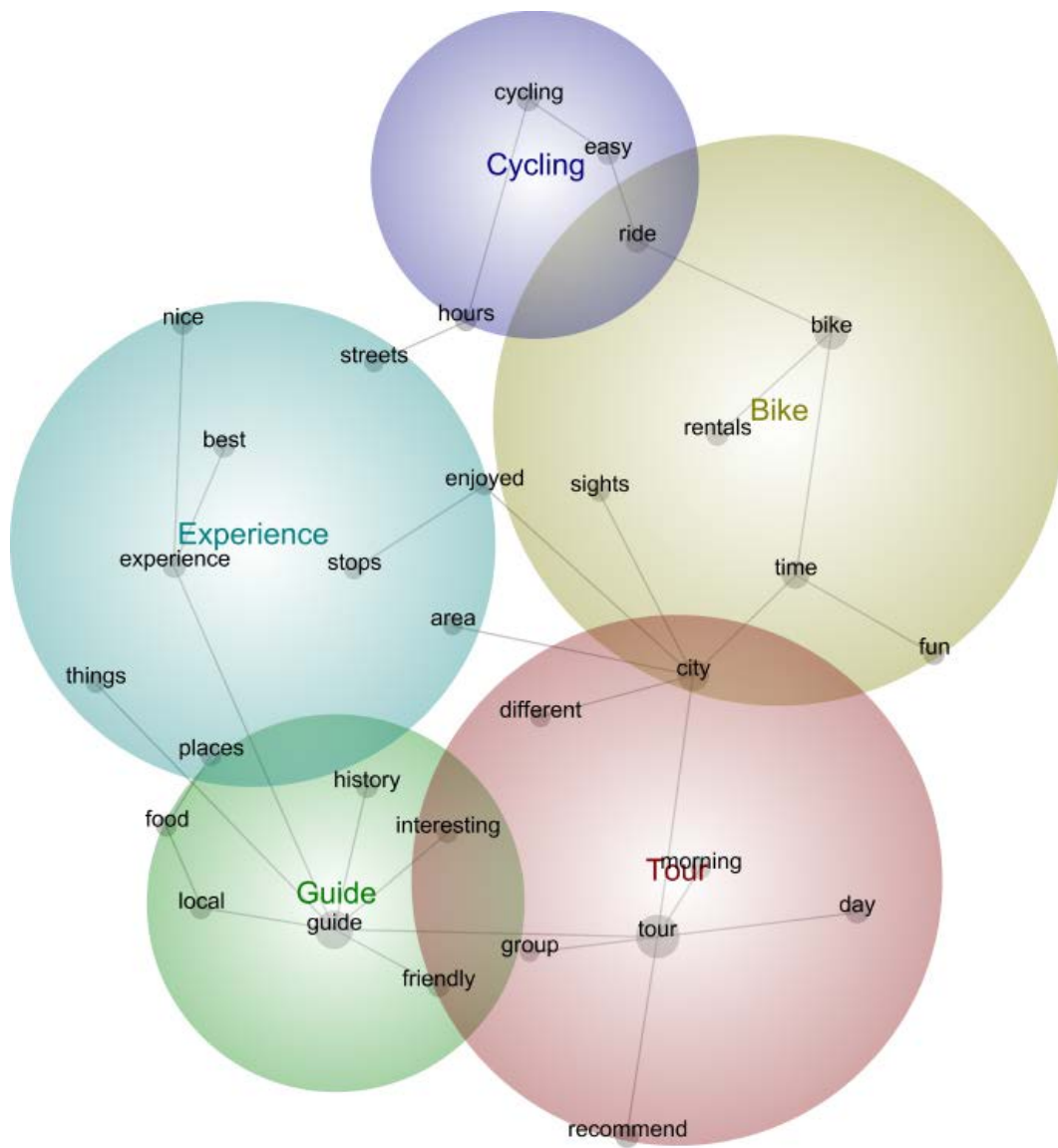
Figure 3 Positive and negative terms

(NB: The scores represent the relevance weightings associated with positive and negative terms respectively)

Word	Score	Word	Score
Great	12.27	problem	4.21
Good	10.48	slow	3.58
friendly	9.32	trouble	3.58
easy	9.26	problems	3.25
best	9.1	difficult	2.77