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Customers' experience of purchasing event tickets: mining online reviews based on topic modeling and sentiment analysis

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Abstract

Purpose – In search of creating an extraordinary experience for customers, services have gone beyond the means of a transaction between buyers and sellers. In the event industry, where purchasing tickets online is a common procedure, it remains unclear as to how to enhance the multifaceted experience. This study aims at offering a snapshot into the most valued aspects for consumers and to uncover consumers' feelings toward their experience of purchasing event tickets on third-party ticketing platforms.

Design/methodology/approach – This is a cross-disciplinary study that applies knowledge from both data science and services marketing. Under the guise of natural language processing, latent Dirichlet allocation topic modeling and sentiment analysis were used to interpret the embedded meanings based on online reviews.

Findings – The findings conceptualized ten dimensions valued by eventgoers, including technical issues, value of core product and service, word-of-mouth, trustworthiness, professionalism and knowledgeability, customer support, information transparency, additional fee, prior experience and after-sales service. Among these aspects, consumers rated the value of the core product and service to be the most positive experience, whereas the additional fee was considered the least positive one.

Originality/value — Drawing from the intersection of natural language processing and the status quo of the event industry, this study offers a better understanding of eventgoers' experiences in the case of purchasing online event tickets. It also provides a hands-on guide for marketers to stage memorable experiences in the era of digitalization.

Keywords Event management, Hospitality, Topic model, Sentiment, Event ticket, Experience **Paper type** Research paper

1. Introduction

In the age of technology, online social networks have created a paradigm shift in collecting knowledge and information prior to the actual purchase of products or services (Bilgihan et al., 2016). Unlike previously, where services were evaluated on-site, earlier studies have undermined the importance of e-service quality (Tsang et al., 2010). Online service can influence customers' satisfaction, booking intentions and loyalty toward companies (Liu et al., 2016; Cui et al., 2018; Tsang et al., 2010). In the event industry, selling tickets is one of the core activities directly affecting the revenue stream and value proposition of a business. Similar to other booking platforms, customers often assess services based on the variety of choice, product price and website design (Tsang et al., 2010). Additionally, in the quest of a personalized offer, the notion of experience economy reinforces the importance of value co-creation with the customers (Neuhofer et al., 2020). Eventgoers are seeking more than just typical services, but memorable and extraordinary experiences (Neuhofer et al., 2020).



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Thus, specific to ticketing websites, positive experiences increase one's booking intentions and the willingness to use a certain platform (Ajay and Potti, 2017).

While acknowledging the importance of purchasing experiences within the digital realm, existing literature tends to have a strong focus on investigating consumer perceptions toward online travel agencies (e.g. Booking.com) (Yu and Zhang, 2020) and their website usability (Kucukusta et al., 2015). Meanwhile, although the event and tourism industries are interconnected, previous studies have normally focused on onsite and post-consumption experiences (Neuhofer et al., 2020) rather than the pre-process (e.g. online ticket purchasing). Other focuses of event-related research have concentrated on attendees' motivations and intentions of attending/participating in an event/festival (Yan and Halpenny, 2019; Vinnicombe and Sou, 2017; Muhs et al., 2020). However, as value creation is dynamic, continuous and multiphasic (Varkaris and Neuhofer, 2017), any detailed aspect even prior to the event is salient. For instance, Neuhofer et al. (2020) state that festivalgoers have difficulties in getting tickets for high-demand events with limited availability.

Having a look at the methodological aspects, existing studies have often adopted traditional approaches (e.g. surveys and interviews) to examine event experiences (Kucukusta et al., 2015; Bilgihan et al., 2016; Neuhofer et al., 2020). Yet, as user-generated content (UGC) continues to become more popular, there is an increasing trend to share experiences online (Yu and Sun, 2019). Nevertheless, drawing from the disciplines of marketing and data science, marketers often find difficulties in unveiling the meanings of social media text (Bharadwaj et al., 2020). In fact, the recent advancements in natural language processing (NLP) have led to a sea change from conventional manual coding to automation of data collection and analysis. Derived from the field of artificial intelligence, linguistics, computer science and information engineering, topic modeling and sentiment analysis have emerged as the most widely adopted NLP techniques in marketing and management (Hannigan et al., 2019; Reisenbichler and Reutterer, 2019) to classify consumer experiences and to detect the polarity of text data. Despite the fact that generating insights from massive datasets is especially relevant to tourism and events (Beck et al., 2017), a clear guide for NLP data-driven methods in the context of tourism and hospitality is yet to be developed (Xiang, 2018). After all, as topic modeling features a bottom-up approach by nature, this technique is particularly suitable for exploratory studies (Guo et al., 2017).

Thus, this research aims to uncover event attendees' feelings and the important aspects valued the most by eventgoers when purchasing event/festival tickets on ticketing platforms. By bridging the interdisciplinary fields of data science and marketing, this study goes beyond the scope of previous research regarding eventgoers' experiences in purchasing tickets online. Moreover, it also encourages cross-domain collaborations between data scientists and event professionals by applying NLP to the event management field. In this way, insights that are often overlooked by marketers based on UGC (Shafqat and Byun, 2020) to orchestrate memorable online purchasing experiences can be observed. The findings are ultimately beneficial for event providers, online marketers and retailers to further stage and customize online experiences.

2. Literature review

2.1 From service quality to e-service quality

To evaluate event and festival experiences, earlier studies have adopted the SERVQUAL dimension (i.e. tangibles, reliability, responsiveness, assurance and empathy) (Alexandris et al., 2017; Bruwer and Kelley, 2015; Meleddu et al., 2019). Nonetheless, the epochal change to an economy primarily based upon information technology has led to a paradigm shift concerning online service. For online consumers, e-service quality refers to the entire interactive process within the virtual sphere (Santos, 2003), starting from the information

search until the end of the transaction (Wolfinbarger and Gilly, 2003). As purchasing online entails various interactive processes (Tsang et al., 2010), e-service quality is crucial to retailers because of its direct impact on consumers' decision-making and customer relationship management (Amin, 2016; Putrianti and Semuel, 2018). Measuring e-service quality also allows for a better understanding of a consumer's most valued aspects (Collier and Bienstock, 2015). However, the scope of e-service quality is rather broad and has not reached a consensus among researchers (Hahn et al., 2017).

Previous literature has addressed the notion as e-commerce quality (Barnes and Vidgen, 2002), retail quality (Wolfinbarger and Gilly, 2003) and website quality (Sun et al., 2016), with a focus on different aspects. An example thereof is Tsang et al. (2010), who examined the eservice quality of online travel agencies and discovered that customers' satisfaction correlates with website functionality, information quality, safety and security as well as customer relationship. In the context of e-banking, other studies have highlighted online support and system availability as being the salient factors in influencing customers' satisfaction (Avo et al., 2016), which subsequently affects customers' loyalty toward the business (Amin, 2016). Regarding hotel websites, the visual appearance of the user interface and the quality of human-internet interaction seem to be critical (Hahn et al., 2017), while on retailing platforms (e.g. eBay), e-trust and e-security have been proven to be the influential factors in affecting the overall service quality during the transaction process (Senadzo, 2019). Although several studies have examined e-service quality in various contexts, consumer perceptions differ depending on the nature of the business. Specific to the event industry, existing literature has concentrated on the discussion of onsite event experiences. Bruwer and Kelley (2015), for instance, evaluated event attendees' behaviors at a wine festival, whereas Andersson et al. (2017) investigated the relationship between service quality, satisfaction and eventgoers' expenditure in a music festival. As such, consumers' pre-experiences (e.g. purchasing tickets) in the event industry still remain unclear.

2.2 Antecedents of online purchasing experiences

Digitalization has caused unprecedented impacts regarding how consumers make purchase decisions and proceed with a payment. In the digital economy, the proliferation of online platforms has intensified the competition among marketers (Schaupp and Bélanger, 2005). Earlier studies have examined the significant aspects influencing customers' satisfaction and perceptions toward shopping and booking websites. For example, young consumers view the issue of privacy as the most influential factor in affecting their satisfaction, but consider security the least influential (Schaupp and Bélanger, 2005) because the majority of consumers already assume that security is a standard attribute of any online platform (Jiradilok et al., 2014). Meanwhile, trustworthiness has been proven to be a major indicator relating to satisfaction and purchase intention (Tang and Huang, 2015; Agag and El-Masry, 2017). Tang and Huang (2015) claim that the extent of trust toward the website is more crucial than the website's usability. Trustworthiness can also be evaluated based on the company's technical competence (Lee and Turban, 2001) and the knowledge provided by online service agents (Kennedy et al., 2001). Additional factors include product and transaction transparency (e.g. the disclosure of product price and delivery service) (Zhou et al., 2018). Furthermore, information disclosure is vital in electronic marketplaces owing to its direct impact on customers' purchase intentions and satisfaction (Gunawan and Huarng, 2015; Zhu, 2002).

Apart from the purchasing process, customer service is a critical aspect of online businesses. Normally, e-service encounters occur via live chat, an online helpdesk and/or social media sites (Turel and Connelly, 2013). Effective online communication and perceived interactivity have been found to be important triggers in optimizing customers' overall experiences (Song and Zinkhan, 2008) and, thereby, improving the process of service recovery (Turel and Connelly, 2013). Other salient factors influencing online experiences

include employees' competence (e.g. knowledge and commitment) (Yang et al., 2004) and timely responses (Stevens et al., 2018). Notably, the evaluation of service no longer ends at the point of transaction; instead, post-purchase strategies are equally as important for marketers to encourage retention and improve brand reputation. Specific to the case of purchasing tickets, after-sales service can be delivery and a hotline provided by the helpdesk (Rigopoulou et al., 2008). Effective after-sales service elevates the communication between consumers and businesses (Agnihotri et al., 2016) and correlates with satisfaction and repurchase intentions (Rigopoulou et al., 2008). Finally, as online reviews have tremendous impacts on potential customers, service experiences can be co-created/co-destructed by word-of-mouth (WOM) (Duarte et al., 2018), in which positive WOM can improve customer loyalty (Harrigan et al., 2017) and lead to the marketing promotion of products and services (Hultman et al., 2015).

2.3 Text analytics of online reviews

Information and communication technologies allow consumers to share their experiences online using texts, pictures and videos (Lim et al., 2019). Referred to as UGC, the analysis of UGC can disclose customers' feelings (Buhalis and Sinarta, 2019) and experiences that might be overlooked by marketers (Shafqat and Byun, 2020), thus fostering the transformation of smartness in tourism and hospitality (Li et al., 2019). Websites that enable consumers to share their experiences include Google Review, Yelp and Trustpilot, among many others. The advancement of data science has provoked an increasing trend in using text analytics to unveil customers' perceptions (Hu et al., 2019; Park et al., 2018; Phillips et al., 2017; Shin et al., 2019). Due to the unstructured nature of online reviews, tourism scholars have embraced NLP as an emerging tool to gain deeper insights on a huge amount of text data (Amado et al., 2018; Korfiatis et al., 2019). That is, machines are able to read, understand and derive meanings from human languages. Under the guise of text analytics, topic modeling and sentiment analysis are currently the dominant approaches used in the forefront of tourism contexts (Shafqat and Byun, 2020; Yu and Zhang, 2020; Calheiros et al., 2017). The former identifies hidden topical patterns, while the latter extracts subjective information (e.g. the tone of a sentence) from textual information.

In the case of online review platforms, Xiang et al. (2017) investigated comments posted on TripAdvisor, Expedia and Yelp in which they discovered that customers often discuss basic service, value, landmark and attraction, dining experiences and the core product in hotel service encounters. Similarly, another study took advantage of the topic modeling method to reveal crucial factors that influence passengers' perceptions toward the service quality in the aviation industry (Korfiatis et al., 2019). Yet, notably, understanding the various aspects of experiences are not enough. Scholars have necessitated the need to advance quantitative results by incorporating consumers' feelings through sentiment analysis (Han et al., 2016). The synergy of opinion mining and topic classification further generates comprehensive topical information by computationally quantifying online reviews (Vu et al., 2019; Gomes and Casais, 2018). For instance, built upon the results of topic modeling, sentiment analysis enables researchers to capture an overview regarding the positive and negative aspects of consumer experiences in hotels, restaurants and any other service entity (Mankad et al., 2016; Calheiros et al., 2017; Yu and Zhang, 2020). Nevertheless, the application of topic-based sentiment analysis has been used mainly in the field of hotel industry, whereas users' feelings regarding online purchasing experiences remain unclear when it comes to event ticketing platforms.

3. Methodology

3.1 Sample and sampling

To conceptualize eventgoers' ticket purchasing experiences and their feelings throughout the journey, this research applied a non-probability purposive sampling technique based on

online consumer reviews on Trustpilot (www.trustpilot.com). Trustpilot is a business-to-consumer open platform that brings people and business together to create better experiences (Trustpilot, 2019). Businesses are classified into 22 different categories, including events and entertainments, travel and vacation and restaurants and bars, among others. This study, at large, placed a focus on the 76 businesses related to "event ticket sellers" under the category of "events and entertainments." However, to ensure a similar popularity rate across the selected companies, only those that received reviews over the past 24 months were taken into consideration. Additionally, companies with less than 500 reviews were filtered out. Finally, this resulted in six companies with four different focuses.

Two of the six companies mainly provide ticket selling services; one company's expertise lies in offering talents for vents, one business delivers electronic invitation services and the other two businesses act as ticket search engines. Because of the focus of this research, the first two companies (i.e. online ticket selling) have been taken as the main reference points. Although the headquarters of both companies are based in the USA, they offer more than 100,000 tickets to various events around the world, which include, but are not limited to, sports, concerts, music festivals and theater events. Furthermore, both businesses have over 25 years of experience in the event ticket industry and have accumulated more than one million customers.

Next, this study adopted a data mining technique to extract all the available online reviews based on the two major ticketing platforms. Data collection and compilation was conducted in November 2019. A total of 19,364 online comments published between the years 2013 and 2019 were crawled. Non-English reviews were excluded. After the exclusion, a count of 18,517 comments remained.

3.2 Data processing

This study conducted a topic modeling based sentiment analysis. Because of the massive amount of unstructured data derived from social networks, topic modeling was considered a suitable method to conceptualize the framework (Park *et al.*, 2018). It is an unsupervised technique that clusters a collection of text documents into groups based on similar characteristics. First, text documents were pre-processed. The 18,517 online reviews were transformed into lowercase, and all diacritics/accents were converted into basic formats. Moreover, undesired texts (e.g. and, a, or, I, she, he) were removed. Online reviews were then tokenized and lemmatized. WordNet, an NLP tool based on a large English lexical database (Miller, 1995), was adopted to group nouns, verbs, adjectives and adverbs into a set of cognitive synonyms. Eventually, this process resulted in a total of 261,664 tokens with 9,447 unique ones. Duplicate words were not considered as unique tokens.

Latent Dirichlet allocation (LDA)-based topic model was applied thereafter. Different from other text analysis formats (e.g. latent semantic analysis, k-means, word2vec), LDA relies on Bayesian inference to assign a probability composition of the document to a latent topic (Park et al., 2018; Blei, 2012). The modeling process is thus iterative. Documents are first given a random probability and are refined when more data are processed (Vu et al., 2019). Meanwhile, LDA does not require any assumption about the dataset, thereby allowing researchers to compute the frequency of occurrence of each extracted topic based on its intensity in consumer reviews (Guo et al., 2017). More specifically, LDA assumes that text data are likely to be distributed over different topics, and topics are likely to be distributed over words (Blei, 2012). That is, online reviews with similar words or groups of words that are frequently used together are considered the same topic. The findings generated from LDA enjoy higher generalizability because of the large sample across multiple regions (Guo et al., 2017). Hence, LDA has been the most popular text analytics method embraced by tourism scholars (Park et al., 2018; Calheiros et al., 2017).

First, LDA transformed the online reviews into vectors based on the scores of term frequency-inverse document frequency (TF-IDF), suggesting the importance of a word in a specific topic to facilitate the naming process. TF-IDF is computed based on the number of times a word appears in a collection of texts, divided by the total number of words in a dataset. The score of TF-IDE is always positive and can go beyond 1. Notably, the researchers referred back to the original online reviews to ensure the relevancy of the named topic. In fact, this is a common approach when interpreting the results of LDA because topic modeling puts an emphasis on the role of human researchers (Hannigan *et al.*, 2019).

Subsequently, this study adopted a lexicon- and rule-based sentiment analysis using the Vader algorithm to extract online users' positive and negative feelings based on online reviews. Vader uses a list of lexical features (e.g. words) that have been labeled according to their semantic orientation based on the Natural Language Toolkit (NLTK) (Gilbert and Hutto, 2014). Compared to other methods of sentiment analysis, Vader is particularly suitable for UGC-type texts because it is constructed from a generalizable and valence-based sentiment lexicon (Gilbert and Hutto, 2014). Additionally, the Vader algorithm works well with emojis, slangs and acronyms (Chen *et al.*, 2018), which are commonly used in UGC. The results generated by the Vader algorithm include four classes of sentiments: positive, negative, neutral and compound. The compound score provides a single unidimensional measure of polarity for a given online review. It is computed by summing the valence scores of constituent words in the lexicon and by normalizing a number between -1 (the most negative) and +1 (the most positive).

4. Results

Table 1 presents the ten key topics identified by LDA along with examples of online reviews related to online event ticket purchasing experiences: (1) technical issues, (2) value of core product and service, (3) WOM, (4) trustworthiness, (5) professionalism and knowledgeability, (6) customer service and support, (7) information transparency, (8) additional fee, (9) prior experience and (10) after-sales service.

Note that the topics were named based on keywords scoring higher on TF-IDF. To ensure that the results generated by the algorithm are consistent with human interpretation, a Cohen's kappa was performed to test the intercoder reliability. Ten online reviews in each topic were randomly selected for coding, which was conducted by two external coders with tourism/business backgrounds. According to the two coders and the classification of the algorithm, Cohen's kappa value was 0.84, suggesting almost perfect agreement among the raters (Landis and Koch, 1977). Supplementary to the keywords, Table 1 also illustrates the sentiment scores of each topic. Note that this study used the overall sentiment scores to allow comparison between the identified topics.

Overall, the findings demonstrate that customers feel slightly positive toward website security (e.g. "the website appears to be quite reliable at [the] first glance"; "the system was easy to navigate, so it seems legit") and how trustworthy the online salesperson is via live chats when purchasing event tickets online (e.g. "I feel safe to [do] transaction[s] because my salesperson understands my needs"). Given that the service encounter occurred digitally, support from online service agents still seems to play a critical role in influencing the overall customer experience. According to the compound values, eventgoers are more satisfied with "professionalism and knowledgeability," followed by "after-sales service" and "customer support." Based on the scores of TF-IDF, being equipped with adequate knowledge and being able to provide timely responses to customer queries are particularly valuable aspects (e.g. "I was very impressed because he is very good and knowledgeable"; "the only group that answers the phone in a timely manner").

Topic Name	Name	Keywords	Definition	Positive	Positive Negative Neutral Compound	Neutral	Compound
1	Value of core product	Great, price, seat, future, ticket, low,	The value and worthiness of purchasing	+0.407	-0.029	+0.564	+0.609
2	and service After-sales service	seussy, vaue, avandonny, agam Tell, inform, email, arrive, issue, order, efficient, receive, ticket, before	through of the control of the follow-up service provided by the online ticket sellers after the completion of a transaction.	+0.162	-0.050	+0.788	+0.351
က	Information transparency	Describe, seamless, process, exact, clear, buy, advertise, concise, report, everything	definition of transparency regarding online information and how it matches with the actual service or product	+0.368	-0.020	+0.612	+0.349
4	Prior experience	Relate, order, compare, better, reseller, than, platform, fair, experience more	The comparison between prior purchase experiences on the same website or other online sellers	+0.346	-0.053	+0.601	+0.305
2	Trustworthiness	Capacitates, most sales, verify, safe, salesperson, account, ticket, representative narment website	The reliability and trustworthiness of the online sales representatives or website	+0.259	-0.035	+0.705	+0.305
9	WOM	representative, payment, wesser, Recommend, awesome, serious, high, pleased, website, other, friend, service outstanding	Recommendations and the WOM effects	+0.327	-0.036	+0.637	+0.261
7	Professionalism and knowledgeability	Knowledge, profession, staff, know, impress, people, good, courteous,	The knowledge of online service representatives as well as the way messages	+0.250	-0.011	+0.739	+0.258
∞	Technical issues	Spece, nergy Work, pre-frect, everything, experience, problem, resolve, expect, website, flamber, never	Any technical problems/difficulties that occur while using a ticket selling website	+0.231	-0.152	+0.613	+0.145
6	Customer support	Answer, imakess, never Answer, timely, wrong, provide, obstruct, receive, question, reveal, describe concern	The assistance provided by the online ticket seller	+0.128	-0.051	+0.822	+0.131
10	Additional fee	Fee, high, service, hidden, price, low,	Any additional charges that are not included in the original arount rickets	+0.124	-0.091	+0.785	+0.098
Note(s)	Overall): Topics are sorted based	on the compound sentiment scores, refer	Overall Note(s): Topics are sorted based on the compound sentiment scores, referring to a single unidimensional measure of polarity per topic	+0.266 plarity per 1	_0.043	+0.691	+0.451

Table 1. Identified topics and sentiment scores

In addition to online service, the findings suggest that the consistency between the described information/advertisement and the actual service/products is another crucial factor affecting consumers' experiences. Exaggerated information is neither recommended nor appreciated. Evidence for this can be seen in comments related to a description of an event, e.g. "exactly as described and at a reasonable price." The topic of "information transparency" also transitions to the issue of extra fees that may not have been visible/mentioned at first (e.g. "fees are not clear or upfront"; "only after I completed the transaction, did I notice the extra fees"). Apart from the hidden costs, the outrageous fee (e.g. service fee, booking fee and/or delivery fee) appears to be the most prominent factor triggering negative encounters. The following was stated in one comment: "[everything] worked out well, only thing dissatisfied with was the high service fee." Another consumer mentioned, "I think the fees are a bit overreaching. If it were not so much, I'd use it more than once every year or two."

Concurrently, the results also demonstrate that consumers are not quite satisfied with the technical aspects of the event ticketing websites at the moment, particularly because of the unforeseen technical difficulties encountered in the searching and booking process. Comments read, "the interface is a little confusing" and "experienced a glitch while ordering on-line - transaction did not go through the first time." Instead, consumers feel more satisfied with seamless transactions (e.g. "we really love it because the buying process was smooth and easy"; "finding, purchasing, and printing the tickets was as seamless as it could be"). Notably, for "experienced" (more frequent) buyers/users, their negative feelings toward ticket websites came about by comparing their previous experiences to either other e-ticket sellers or the same service agency. For instance, consumers compared prices (e.g. "fees a little higher than last year"; "no issues at all and got better pricing than other ticketing agencies"), the provided service (e.g. "they did not treat you better than other ticket sellers") and the conveniency (e.g. "easy pick up and [more] convenient than other websites").

Notably, consumers' feelings toward a certain ticketing agency can continue even after the completion of a transaction. Consumers described the after-sales service provided by the ticketing websites as positive. Specifically, eventgoers emphasized the importance of being informed if and when there are any changes (e.g. "they kept me informed and updated until my tickets were ready"; "I drove 5 [hours] to watch the event; could not enter the venue because the tickets delivered were for a later one because of the system error. They [the ticketing agency] never mentioned [anything] about it"). However, others complained about the follow-up marketing and advertising emails (e.g. "after buying my tickets, I have been inundated with spam from these guys"; "everything arrived on time but now I have their spam popping up everywhere").

5. Discussion and conclusion

5.1 General discussion

With the growing popularity of online shopping and the emergence of experience economy, customers are hoping for more than pure online transactions. In line with previous literature, trust has been highlighted as a key feature in studies relating to online purchases and transactions (Lee and Turban, 2001; Putrianti and Semuel, 2018; Agag and El-Masry, 2017). It has been constantly validated that the extent of online users' trust toward a website directly influences users' satisfaction, loyalty and, ultimately, intention to use the website (Al-dweeri *et al.*, 2019; Senadzo, 2019). Notably, the dimension of trustworthiness in this study also includes other relevant factors such as safety and privacy issues. According to the negative words appearing in online reviews, ticket sellers are suggested to investigate this issue to build a more trustworthy website. Particularly, much attention should be paid to the payment page and the 3D-secure for credit card verification. Other scholars state that perceived trustworthiness can be influenced by a company's technical competence

(Kennedy et al., 2001), which can, in turn, demotivate one's online purchasing behaviors (San Martín and Camarero, 2008). Moreover, although previous studies have mainly underlined the usefulness and smoothness of navigating a webpage (Cho and Sagynov, 2015; Kucukusta et al., 2015), this study revealed that, based on the keywords frequently appearing in online reviews, event attendees tend to discuss more about technical problems rather than website usability.

Other aspects often overlooked in earlier literature include information transparency and additional fees. Although the extent of transparency is not something new, it is often linked to the practice of e-government (Awad and Krishnan, 2006; Lollar, 2006). The most relevant literature can be found in the context of personalization (Aguirre *et al.*, 2015; Benson *et al.*, 2015), where scholars link personalization to information disclosure and privacy issues. On social media sites, the higher the level of information transparency, the higher a consumer's intention of purchasing becomes (Gunawan and Huarng, 2015). However, this study argues that the access of information should not just be concentrated on privacy or personal data usage. When it comes to purchasing in the event industry, the consistency between the delivered service/product and the description/customers' expectations is equally important. Another relevant dimension derived from the online reviews mentioned the extra charge that may or may not have been displayed on the website. As a result, event attendees are unsatisfied with the extra service or transaction fee(s) based on selected ticketing websites.

Furthermore, this study acknowledged that eventgoers perceive the skills and knowledge of e-service agents as well as online support to be crucial factors in affecting their online purchasing experiences. Its antecedent can be seen from the dimensions of the traditional SERVQUAL model (Yang et al., 2004; Stevens et al., 2018). As experiences are multiphasic (Varkaris and Neuhofer, 2017), the results highlight the significance of follow-up services after the point of purchasing. More specifically, event attendees have a high need of being informed (e.g. e-ticketing and/or confirmation email) after the purchase, where the positive feedback further leads to better customer experiences (Rigopoulou et al., 2008). Nevertheless, depending on their past experiences (Severt et al., 2006) and by comparing a price with similar platforms they have previously used before, customers might perceive a service differently. Overall, regarding the comments related to the value of a core service or products, customers presented positive feelings in general based on the status quo of the event ticketing platforms. Consistent with previous studies investigating the relationship between customer satisfaction and WOM (San-Martín et al., 2015; Duarte et al., 2018), online satisfaction and positive experiences encourage the effect of WOM, which directly correlates with customer loyalty and the perceived future development of the business (Harrigan et al., 2017; Hultman et al., 2015). All in all, it is worth noting that the goal of this research was not to argue a causal relationship between sentiments and the actual purchasing of event tickets. Indeed, the positive or negative elements of the various topics, per se, might not have a direct impact on actual booking, but staging extraordinary experiences seems to play a critical role in decisionmaking and could anticipate consumers' subsequent actions.

5.2 Theoretical contribution

As a cross-disciplinary research in data science and digital marketing, this study is novel, in that it conceptualizes the antecedents of staging positive online ticket purchasing experiences through the use of topic modeling and sentiment analysis in NLP. By applying the event industry to the overall context, this research advances the current knowledge on e-service encounters, which had been relying heavily on the SERVQUAL model (Meleddu et al., 2019) and website usability (Kucukusta et al., 2015). Methodologically speaking, as the notion of experience economy has gone beyond the onsite and post-event experiences, using LDA and sentiment analysis breaks the boundaries of the current measurements and conceptualizes

key dimensions that can serve as initial findings for future research to follow up on. The methods used in this study shed light on the practicality of analyzing online reviews to uncover event attendees' feelings toward the ticket purchasing experiences through e-sellers. Additionally, this research not only reinforces the notion of trustworthiness and the e-competence in event ticket purchasing, but it also argues that existing literature has overlooked eventgoers' perceptions toward information transparency and additional charges. Going beyond events, meetings and festivals, this research contributes to the broader field of services marketing, analysis of UGC and website design and usability. The framework proposed in this study can be further evaluated in the experiences of purchasing other goods and services online.

5.2.1 Managerial implications. This study offers valuable insights for event professionals to enhance the e-service experiences when it comes to purchasing event tickets. This study conceptualizes ten aspects that can be treated as a foundational guideline on staging positive experiences as early as when potential eventgoers already have the initial intention of purchasing tickets online. The model extends beyond the typical depiction of website usability, in that it outlines what is valued the most by eventgoers.

Event managers should pay attention to the technical problems and extra service charges, which received the lowest sentiment scores. Specifically, these results potentially imply that either the sellers do not provide sufficient information or the additional fee is not clearly apparent on the website. To further improve the experience, event ticket sellers can inform consumers in advance as to why they are being charged or how their money will be used, as it is important for consumers to understand the underlying reasons (Fyall, 2008). Meanwhile, to strengthen the extent of perceived trustworthiness, event marketers can optimize the presentation of information related to privacy and security, for instance. It is also critical to ensure that descriptions are consistent with the provided service. Moreover, the results also demonstrate that online customer support deserves investigating to further improve the experience. Although the identified positive and negative experiences are based on solely two event ticketing platforms, this study offers a framework for event practitioners to evaluate their current performance based on the established identified topics. The methodological techniques also present a hands-on guide for marketers to extract meanings and understand customer experiences in any other context.

5.3 Limitations and recommendations for future research

Given the exploratory nature of this study, it is not without its limitations. First, as the findings were only based on two event ticket e-sellers, future research is recommended to investigate event attendees' ticket purchasing experiences on different websites to further verify the identified aspects. Additionally, it is critical to note that ticket purchasing is only one of the activities among many others prior to an event. Researchers should consider how different marketing materials are acting on individuals such as promotional emails and invitation services. Second, this study neither classified the types of events nor investigated the interplay between experiences and consumers' socio-demographic characteristics. For instance, people who participated in music festivals might have different characteristics and impressions compared to those who attended a business event. As such, customers' perceptions toward e-service encounters could vary depending on their needs. Subsequently, the naming of the topic model is arbitrary and subjective in nature. Despite that the reliability was proven to be satisfactory based on Cohen's kappa value, the results can still differ based on the interpretability of researchers. Thus, future studies are encouraged to conduct follow-up questionnaires to further verify the findings in the case of purchasing event tickets. Other advanced text analytics are also recommended such as correlation explanation (CorEx) and emotional analysis. Finally, although this study identifies various topics and their corresponding sentiments, which are salient in influencing eventgoers' ticket purchasing experiences, it does not guarantee a direct relationship between positive experiences and the likelihood of a purchase. Hence, researchers are encouraged to continue this line of research to explore how eventgoers' feelings influence the actual purchase of event tickets in the long run.

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